Montana Environmental Trust Group, LLC
Trustee of the Montana Environmental Custodial Trust
By Greenfield Environmental Trust Group, Inc.,
Member

GETG
Greenfield Environmental Trust Group, Inc.

PO Box 1230, East Helena, Montana 59635
Telephone (1): (617) 448-9762
Telephone (2): (406) 227-4098
Facsimile: (866) 871-7668

February 19, 2010

SENT BY CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Linda Jacobson (3 Copies)
RCRA Project Manager
US EPA Region VIII
8ENF-T
1595 Wynkoop Street
Denver, Colorado 80202-1129

RE: Consent Decree Civil Action No. CV 98-3-H-CCL East Helena Site
Work Performed in January 2010; Progress Report #133

Dear Ms. Jacobson:

On May 5, 1998, ASARCO and the United States Environmental Protection Agency (EPA) entered into a Consent Decree (the Decree) to further the objectives of the Resource Conservation and Recovery Act (RCRA) and the Clean Water Act (CWA). On December 9, 2009, the Montana Environmental Custodial Trust (the Custodial Trust) was established as part of the larger ASARCO bankruptcy settlement agreement approved by the Bankruptcy Court (SD, Texas) and the US Federal District Court (SD, Texas). A Consent Decree and Settlement Agreement regarding Montana Sites (the Settlement Agreement) was entered into by ASARCO, US Department of Justice (DOJ), US Environmental Protection Agency (EPA), the State of Montana (the State) and the Montana Environmental Trust Group, LLC, not individually, but solely in its representative capacity as Trustee for the Montana Environmental Custodial Trust. The Settlement Agreement describes the role and responsibilities of the Custodial Trust, which include owning, managing, and overseeing the clean-up and revitalization of ASARCO's property in East Helena, Montana (the Site). The United States and the State of Montana are the two designated beneficiaries of the Custodial Trust.

Pursuant to the Settlement Agreement, a motion to reopen the Decree and substitute the Custodial Trust for ASARCO was granted by the US Federal District Court in January 2010. As of the date of this report, EPA, DOJ and the Custodial Trust are in the process of finalizing a First Modification to the Decree that will conform to the terms of the Settlement Agreement. The Custodial Trust submits this progress report under the Decree

subject to and pending the finalization of the First Modification to the Decree. Nothing herein, or in the substitution, should be interpreted or construed to constitute an unqualified acceptance of the terms of the Decree by the Custodial Trust or a waiver or release of its right to a modification of the Decree consistent with the Settlement Agreement. The Custodial Trust reserves all rights to object to those parts of the Decree that it reasonably believes are inconsistent with the Settlement Agreement. As with this report, future progress reports prescribed by the Decree, as so amended, will be submitted to EPA by the Custodial Trust.

Section XI of the Decree (Reporting: Corrective Action) requires submittal of certified monthly progress reports to EPA to describe the actions taken to achieve compliance with the Decree. The reports are to be submitted to EPA no later than the twentieth (20th) day of the subsequent month. The following describes those activities that have occurred or are related to projects performed during January 2010. As to actions performed by ASARCO, the Custodial Trust's predecessor-in-interest, the descriptions are based on information and belief only. The historical steps taken to achieve compliance with the Decree are contained in previous monthly progress reports.

a. **Describe the actions, progress, and status of projects which have been undertaken pursuant to Part VII of the Decree.**

2009 Cleaning and Demolition Work Plan

Not all of the facility temporary liner was installed by ASARCO's contractors prior to the Custodial Trust assuming responsibility for the site. Cleveland Wrecking Company reported that the temporary liner and seaming of existing liners in the area east of the concentrate storage and handling building has not occurred. Verification of the temporary liner placement cannot be confirmed until the snow melts. Replacement and/or repair of the temporary liner east of the concentrate storage and handling building (and to replace and repair any liner damaged as a result of demolition activities performed by Cleveland Wrecking Company) is expected to occur after snow melt. The Custodial Trust will consult with EPA on how best to implement outstanding work related to the temporary liners.

RCRA Facility Investigation (RFI) Phase II Site Characterization and Risk Assessment Work Plans

No RCRA Facility Investigation (RFI) Phase II Site Characterization or Risk Assessment Work Plans activities took place in January 2010.

Interim Measures
No interim measures were conducted in January 2010 at the facility.

Corrective Action Management Unit (CAMU)
Cold weather, snow, and icy liner conditions have prevented monitoring the CAMU Phase II cell leak detection and leachate collection sumps since December 2009. The monitoring of the sumps will resume when more favorable weather conditions return.

RI/FS Long-Term Monitoring Program
In April 2009, EPA requested that a well integrity evaluation be conducted for all wells in the groundwater-monitoring network. In a May 2009 response, a proposed well integrity evaluation was submitted, with a recommendation to conduct the evaluation coincidental with the November 2009 RI/FS Long-Term Monitoring Program sampling event. The well integrity evaluation is complete. The report of the well integrity findings and recommendation is attached to this monthly progress report.

On January 5, 2010, the monthly sampling of select residential groundwater wells, as prescribed in the 2009 Groundwater and Surface Water Sampling and Monitoring Plan (the May 2009 GW/SW Plan) was conducted. Copies of the January 2010 residential well notification letters, along with the corresponding laboratory analytical reports are attached to this monthly progress report.

A summary of the correspondence transmitted as part of the East Helena Consent Decree in January 2010 is included in Attachment I.

b. **Identify any requirements under the Part VII of the Decree that were not completed in a timely manner, and problems or anticipated problem areas affecting compliance with the Decree.**

There were no requirements that were not completed in a timely manner nor were there problems or anticipated problem areas that may affect compliance with the Decree.

c. **Describe projects completed during the prior month, as well as activities scheduled for the next month.**

In accordance with the 2006 Interim Measures Work Plan Addendum, Final Cleaning, Soil Sampling, Backfilling, and Interim Cap Work Plan and the 2006 Interim Measures Work Plan Addendum, Former Acid Plant Sediment Drying Area Slurry Wall, Monitoring, Operation, and Maintenance Work Plan, six areas on site where interim caps have been installed[1] are being inspected on a monthly basis. These monthly inspections were expanded to include areas where above-grade demolition activities were conducted under the 2008 Interim Measures Work Plan and the 2008 and 2009 Cleaning and Demolition Project Work Plan. The most recent inspections occurred on January 4, 2010.

In accordance with the July 2000 CAMU Design Analysis Report (Operation and Maintenance Plan), the CAMU Phase 1 cell is being inspected monthly. The most recent inspection occurred on January 2, 2010. Inspections of the CAMU Phase 2 cell temporary cover are conducted on a weekly basis. Monthly and weekly inspections confirm that the CAMU Phase 1 and Phase 2 cells are operating as designed.

d. **Describe and estimate the percentage of studies completed.**

The following projects or studies are 100% complete:

- Pump and treat pilot scale testing for source area reduction of groundwater contamination;
- Jar testing (Phase I) of the East Helena PRB materials testing program;
- Slurry wall construction in the former acid plant sediment drying area;
- Interim capping project for the following areas:
    - former acid plant sediment drying area
    - dross area
    - sinter plant area
    - gas cleaning and contact sections of the acid plant
    - thaw house

[1] The four areas include: the former acid sediment drying area; the dross plant, breaking floor, and CSHB areas; sinter plant, crushing mill, sample mill, and acid plant dust; the acid plant gas cleaning and areas; blast furnace flue, Monier flue, and blast baghouse; and the thaw house.

  - blast furnace baghouse
  - blast furnace flue
  - Monier flue
  - sample mill
  - crushing mill
  - hopto pad
  - storage bins and gallery
  - acid dust facility
  - sinter stocking building
  - highline railroad
  - abandoned and new breaking floor buildings
  - groundwater sump
  - sinter plant, acid plant, and blast furnace baghouse stacks.
- January 2008 CAMU Phase 2 Cell Design Analyses, CAMU Phase 2 cell construction, and placement of 2008 and 2009 wastes within the CAMU Phase 2 cell;
- Slurry wall construction in the former speiss-dross plant area;
- Historic recordation tasks associated with the 2008 and 2009 Cleaning and Demolition Work Plans;
- 2008 Interim Measures Work Plan Addendum, Blast Furnace Flue and Monier Flue Cleaning and Demolition and Demolition Footprint Exposed Areas Soil Sampling obligations;
- Submittal of the Baseline Ecological Risk Assessment Work Plan (June 2009) and Field Sampling and Analysis Plan (FSAP);
- Submittal of the Human Health Risk Assessment Work Plan (October 2009); and
- Submittal of the Phase II RCRA Facility Investigation Site Characterization Work Plan (September 2009).

e. **Describe and summarize all findings to date.**

The details of Findings through December 2009 have been described and summarized in previous monthly progress reports.

f. **Describe actions being taken to address problems.**

There were no other actions required to address problems associated with the Decree.

g. **Identify changes in key personnel during the period.**

There were no significant changes in key personnel during the period.

h. **Include copies of the results of sampling and tests conducted and other data generated pursuant to work performed under Part VII of the Decree since the last Progress Report. ASARCO may submit data that has been validated and confirmed by ASARCO to supplement any prior submitted data. Updated validated and confirmed data shall be included with the RFI Report, if not delivered before.**

Copies of the January 2010 residential well notification letters, along with the respective laboratory analytical reports are attached to this monthly progress report.

Two validation packages entitled *"Validation Summary, Asarco East Helena Post RI/FS Long-Term Monitoring Project, East Helena Residential Groundwater, Inorganic Analyses, November 2009 Sample Event"* and *"Validation Summary, Asarco East Helena Post RI/FS Long-Term Monitoring Project, East Helena Residential Groundwater, Inorganic Analyses, December 2009 Sample Event"* are attached to this monthly progress report.

i. **Describe the status of financial assurance mechanisms, including whether any changes have occurred, or are expected to occur which might affect them, and the status of efforts to bring such mechanisms back into compliance with the requirements of this Decree.**

The Custodial Trust received funds for Environmental Actions earmarked for site clean-up in connection with the ASARCO bankruptcy settlement. The Custodial Trust deposited the funds in a segregated East Helena Clean-up account and is investing and managing the funds in accordance with the provisions of the Settlement Agreement.

Paragraph 97 of the Decree requires that a single cost estimate for the remaining work to be performed under Section VII (Corrective Action at East Helena) be developed and maintained with the annual cost estimates being transmitted with the January monthly progress reports. During January 2010, cost estimates were prepared for implementing: (i) the human health risk assessment work plan

($106,000); (ii) the ecological risk assessment work plan ($492,947), (iii) the RFI work plan ($315,407); and (iv) on-going groundwater investigations ($372,220). The Custodial Trust is currently reviewing the budget and work plans for 2010 with the EPA. Additional activities that EPA may deem necessary will be included in the current and/or future budget estimates.

Please do not hesitate to call me with any questions pertaining to this transmittal.

Sincerely,

Cynthia Brooks

Montana Environmental Trust Group, LLC
Trustee of the Montana Environmental
Custodial Trust
By: Greenfield Environmental Trust Group, Inc.,
Member
By: Cynthia Brooks, President

Attachments

CERTIFICATION
PURSUANT TO U.S. v ASARCO INCORPORATED
(CV-98-3-H-CCL, USDC, D. Montana)

I certify under penalty of law that this document, January 2010 Progress Report and all attachments, were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

Signature: _____
Montana Environmental Trust Group, LLC,
Trustee of the Montana Environmental Custodial Trust
By: Greenfield Environmental Trust Group Inc., Member
By: Cynthia Brooks, President
Date: February 19, 2010

ATTACHMENT 1

SUMMARY OF CORRESPONDENCE
JANUARY 2010 PROGRESS REPORT
CONSENT DECREE: EAST HELENA SITE

DATE SENT	SENT FROM	SENT TO	SUBJECT	RESPONSE
Attached to This Monthly Progress Report	Cynthia Brooks	Linda Jacobson	Well Integrity Evaluation	EPA Approval Required
Attached to This Monthly Progress Report	Cynthia Brooks	Linda Jacobson	Validation Summary, Asarco East Helena Post RI/FS Long-Term Monitoring Project, East Helena Residential Groundwater, Inorganic Analyses, November 2009 Sample Event and Validation Summary, Asarco East Helena Post RI/FS Long-Term Monitoring Project, East Helena Residential Groundwater, Inorganic Analyses, December 2009 Sample Event	No Formal Response Required
Attached to This Monthly Progress Report	Cindy Brooks	Linda Jacobson	January 2010 Residential Well Notification Letter/Results	No Formal Response Required

WELL INTEGRITY EVALUATION
FOR THE FORMER ASARCO EAST HELENA FACILITY

Prepared for:

Montana Environmental Trust Group
P.O. Box 1230
East Helena, MT 59635

Prepared by:

Hydrometrics, Inc.
3020 Bozeman Avenue
Helena, MT 59601

February 2010

WELL INTEGRITY EVALUATION
FOR THE FORMER ASARCO EAST HELENA FACILITY

1.0 INTRODUCTION

This report summarizes the well integrity evaluation performed by Hydrometrics, Inc. for the Former Asarco East Helena Facility. The well integrity evaluation was requested and outlined by the EPA, Region 8, in a letter (dated April 27, 2009) to Jon Nickel commenting on the 2009 sampling and monitoring plan. Comments to the monitoring plan were addressed in a letter dated May 12, 2009, and included an outline for the scope of the requested integrity evaluation. Both letters have been appended to this report for reference.

2.0 EVALUATION CRITERIA

Based on the requirements set forth in the correspondence regarding the 2009 Sampling, Analysis and Monitoring Plan, a well integrity evaluation plan and scope were developed, with the intent of performing the evaluation coincident with the November, 2009 sampling event. Items included in the integrity evaluation are listed and briefly discussed below.

a) Evaluate each well for presence of:

   i) Monitoring point (MP) mark (the location from which all measurements are referenced from, usually a mark on the top of the well casing).
   ii) Standing or ponded water (water either inside the well vault or above the ground surface surrounding the well).
   iii) Collision or damage to protective casing (significant irreparable damage to the outer protective casing that impacts the integrity of the well).
   iv) Frost heaving (upward thrust of ground surface caused by freezing of moisture in soil).
   v) Casing degradation (environmental damage to casing).

vi) Lock: (presence of at least one lock on the well, either a lock on the locking casing cover or lock on expansion cap of the well).

vii) Well subsidence (settlement of ground surface or annulus of the well, causing negative drainage).

viii) Damage to apron (if existing, damage to concrete or asphalt apron around well).

b) Obtain the total depth (TD) and depth to water (SWL) for each well.

c) Redevelop any monitoring well when either of the two conditions occur: 1) silt or sediment is determined to have entered the well and has accumulated to a depth of one foot, or 20% of the screen length, whichever is less; or 2) yield from the well is noted to have significantly decreased or recovery time has significantly increased, indicating clogging of the screen and/or sand filter.

3.0 PERFORMANCE OF EVALUATION

The well integrity evaluation was performed coincident with the November, 2009 sampling event. Total depths and static water levels were measured on all of the wells on October 27, and 28, 2009. All other evaluation tasks were completed during sampling of each well and were completed from October 30, 2009 through November 19, 2009. Evaluation data have been tabulated and are appended in the Well Integrity Evaluation and Total Depth Comparison tables (Tables 1 and 2, respectively).

3.1 DATA SUMMARY

The Well Integrity Evaluation table includes data pertaining to evaluation criteria and includes comments and recommendations for corrective action. The evaluation for the criteria is summarized below.

Item a) Eleven out of 146 indicated presence of damage to the well or protective casing. Based on the comments damage typically includes dented protective casing, missing or broken lock tabs, or damage to the flush mount cover which prohibits fastening the lid.

Two out of 146 wells were noted as missing monitoring point marks. Marks were added to these wells during the event.

Seven out of 146 wells were noted as having standing or ponded water; most of these were flush mount vaults, which are particularly vulnerable to migration of water from surface drainage. These wells could be improved by replacement or repair of the cover sealing gaskets and/or improving surface drainage characteristics.

Five out of 146 wells were noted as possibly having frost heaving occur within the surrounding ground. Characteristics of this included cracks in the ground surface or between the ground and apron. Identification of frost heaving can be subjective and difficult to identify, and further inspection would need to be performed in order to finalize identification.

Eight out of 146 wells were noted as not having locks; however, seven out of these were flush mount vaults, and the other well is a sparge well. Generally, locks were added to the wells during sampling that did not have them, as extra locks were carried during the event. It should be noted that there may be some overlap with recordation of this field, as some wells that could not physically have locks may not have been marked as "missing" a lock.

Three out of 146 wells were noted as having subsidence, identified either by sloping ground surface of gaps between the protective casing and ground. These wells may benefit from surface grading.

Three out of 146 wells were noted as having damage to the apron. These wells may benefit from repair or replacement of the apron.

A field noted as "other damage" was included in the integrity evaluation in order for technicians to note and describe damage that did not wholly fit the characteristics of any other field. Thirteen out of 146 wells were noted as having other damage; these damages are discussed in the attached table.

Item b) of the outlined tasks included measuring the total depth and static water level in each well. Measurements were obtained by use of a reel tape with a weight on the end and a water level indicator, referenced to the monitoring point for each well. The attached Table 2 (Total Depth Comparison) includes SWL and total depth data for the November 2009 event, and TOTAL DEPTH according to the "WellSumm7" database. WellSumm7 is summary table of all monitoring and residential wells for the Former Asarco East Helena facility, and is the most comprehensive source of characteristics (i.e., total depth, casing size) for the wells.

Total Depths were measured on a number of well in May 2009 to a precision of 0.5 feet in order to confirm proper well volume calculations for monitoring purposes. In order to confirm the November 2009 total depth measurements the results were compared to the May 2009 total depths. Eleven wells (APSD-16, DH-1, DH-2, DH-3, DH-15, DH-31, DH-63, DH-64, EH-116, MW-7, and STW-8) showed discrepancies between the May 2009 and November 2009 events reported total depths, therefore the total depth on these wells were re-measured on January 26, 2010. The attached table includes the re-measured total depth. The table includes columns for differences between measured total depths during the integrity evaluation and reported depths in WellSumm7 expressed in both foot-difference and %-difference. Total depth data in WellSumm7 is based on data reported during installation of the well either by the driller or geologist, as such many of the differences in total depths compared to WellSumm7 are thought to be primarily related to the level of precision used during well installation, or possibly because of faulty tape used by driller.

Item c) of the outlined tasks set standards for well redevelopment. There are three wells that are recommended for redevelopment (DH-3, DH-13, and EH-62). All other wells that had measured total depths that differed from reported depths were greater than reported. The most probable cause of this is the level of precision used to measure the well depth during well installation was poor, or drillers used a faulty tape.

Based on the above summary, the following repairs/upgrades are recommended on the following wells:

- Replace or conduct repairs on seven flush mounts:
  - DH-6
  - EH-63
  - EH-106
  - EH-107
  - EH-110
  - EH-113
  - EH-115

- Repair/Raise well casing on four wells:
  - DH-9
  - DH-17
  - DH-24
  - EH-58

- Repair/Upgrade protective casing on five wells:
  - DH-24
  - EH-101
  - EH-132
  - EH-135
  - SPAR-3

- Redevelop four wells:
  - EH-62
  - DH-13
  - DH-3
  - DH-2 (bail only)

- Replace/Patch concrete apron on four wells:
  - DH-47
  - DH-56
  - EH-69
  - DH-67

- Reseal well annulus at APSD-9

- Replace well cap on four wells:
    - DH-11
    - DH-33
    - EH-53
    - TW-1

- Clean out debris in three wells:
    - DH-12
    - DH-13
    - DH-18

TABLES

TABLE 1. WELL INTEGRITY EVALUATION

Well Name	Casing Damage	MP Mark	Standing/Ponded Water	Other Damage	Frost Heaving	Lock Present	Well Subsidence	Damage Apron	Measured TD	Change in TD	Comments	Recommended Corrective Action
APSD-1	N	Y	N	N	N	Y	N	N	Y	N		
APSD-10	N	Y	N	N	N	Y	N	N	Y	N		
APSD-11	N	Y	N	N	N	Y	N	N	Y	N		
APSD-12	N	Y	N	N	N	Y	N	N	Y	N		
APSD-15	N	Y	N	N	N	Y	N	N	Y	N		
APSD-16	N	Y	N	N	N	Y	N	N	Y	N		
APSD-2	N	Y	N	N	N	Y	N	N	Y	N		
APSD-3	N	Y	N	N	N	Y	N	N	Y	N		
APSD-4	Y	Y	N	N	N	Y	N	N	Y	N	Dented Protective casing	No Action - Well Integrity Still Intact
APSD-7	N	Y	N	N	N	Y	N	N	Y	N		
APSD-8	N	Y	N	N	N	Y	N	N	Y	N		
APSD-9	Y	Y	N	N	Y	Y	Y	N	Y	N	2-3" gap around well	Re-seal well annulus
DH-1	N	Y	N	N	N	Y	N	N	Y	N		
DH-10A	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
DH-11	N	N	N	Y	N	Y	N	N	Y	N	Steel Standpipe / Missing Well Cap	Replace well cap
DH-12	N	Y	N	Y	N	Y	N	N	Y	Y	Soil near top of PVC casing inside steel casing (needs cleaned out), TD greater than reported	Clean out debris
DH-13	N	Y	N	Y	N	Y	N	N	Y	Y	Soil near top of PVC casing inside steel casing (needs cleaned out). Possible sedimentation.	Clean out debris, redevelop well
DH-15	N	Y	Y	N	N	Y	N	N	Y	N	Bailed out access hole / flush mount	
DH-17	N	Y	N	N	N	Y	N	N	Y	Y	Well completed below ground surface, TD > than reported.	Raise/extend well casing above grade
DH-18	N	Y	N	N	N	Y	N	N	Y	N	Lots of soil in Casing	Clean out debris
DH-19R	N	Y	N	N	N	Y	N	N	Y	N		
DH-2	N	Y	N	N	N	Y	N	N	Y	Y	TD < reported, silica sand reported in well	Bail well to remove sand if possible. Do not develop as it may bring more sand into well
DH-20	N	Y	N	N	N	Y	N	N	Y	N		
DH-21	N	Y	Y	N	N	Y	N	N	Y	N		
DH-23	N	Y	N	N	N	Y	N	N	Y	N		
DH-24	Y	Y	N	Y	N	Y	N	N	Y	Y	2-protective casings - casing inside is not damaged but is below or near ground surface. Large barrel outer-casing is damaged. Well needs repair	Replace and modernize surface casing
DH-27	N	Y	N	N	N	Y	N	N	Y	N		
DH-29	N	Y	N	Y	N	Y	N	N	Y	N		
DH-3	N	Y	N	N	N	Y	N	N	Y	Y	Possible sedimentation	Redevelop well
DH-30	N	Y	N	N	N	Y	N	N	Y	N		
DH-31	N	Y	N	N	N	Y	N	N	Y	N		
DH-32	N	Y	N	N	N	Y	N	N	Y	N		
DH-33	N	Y	N	N	N	Y	N	Y	Y	N	Cap is ripped	Replace cap
DH-34	N	Y	Y	N	N	Y	N	N	Y	N		
DH-35	N	Y	N	N	N	Y	N	N	Y	N		
DH-36	N	Y	N	N	N	Y	N	N	Y	N		
DH-37	N	Y	N	N	N	Y	N	N	Y	N		
DH-38	N	Y	N	N	N	Y	N	N	Y	N		
DH-4	N	Y	N	N	N	Y	N	N	Y	N		
DH-42	N	Y	N	N	N	Y	N	N	Y	N		
DH-47	N	Y	N	N	Y	Y	N	Y	Y	N	Crack between concrete seal asphalt	Patch concrete
DH-48	N	Y	N	N	N	Y	N	N	Y	N		
DH-49	N	Y	N	N	N	Y	N	N	Y	N		
DH-5	N	Y	N	N	N	Y	N	N	Y	N		
DH-50	N	Y	N	N	N	Y	N	N	Y	N		
DH-51	N	Y	N	N	N	Y	N	N	Y	N		
DH-52	N	Y	N	N	N	Y	N	N	Y	N		
DH-53	N	Y	N	N	N	Y	N	N	Y	N		
DH-54	N	Y	N	N	N	Y	N	N	Y	N		
DH-55	N	Y	N	N	N	Y	N	N	Y	N		
DH-56	N	Y	N	Y	N	Y	N	Y	Y	N	Shallow concrete apron such that water could migrate through to the well	Replace concrete apron
DH-57	N	Y	N	N	N	Y	N	N	Y	N		
DH-58	N	Y	N	N	N	Y	N	N	Y	N		
DH-59	Y	Y	N	N	N	Y	N	N	Y	N	Lock tabs bent still functional	No Action - Well Integrity Still Intact
DH-6	Y	Y	N	N	N	Y	N	N	Y	Y	Rim of flush mount lid broken, TD > than reported	Repair or replace as necessary
DH-62	N	Y	N	N	N	Y	N	N	Y	N		
DH-63	N	Y	N	N	N	Y	N	N	Y	N		
DH-64	N	Y	N	N	N	Y	N	N	Y	N		

Well Name	Casing Damage	MP Mark	Standing/Ponded Water	Other Damage	Frost Heaving	Lock Present	Well Subsidence	Damage Apron	Measured TD	Change in TD	Comments	Recommended Corrective Action
DH-65	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
DH-66	N	Y	N	N	N	Y	N	N	Y	N		
DH-67	N	Y	N	N	Y	Y	N	N	Y	Y	Slight space between concrete ground, TD > reported	Seal gap
DH-68	N	Y	N	N	N	Y	N	N	Y	N		
DH-69	N	Y	N	N	N	Y	N	N	Y	N		
DH-7	N	Y	N	N	N	Y	Y	N	Y	N	Slight Perimeter ground subsidence	No Action - Well Integrity Still Intact
DH-70	N	Y	N	N	N	Y	N	N	Y	N		
DH-71	N	Y	N	N	N	Y	N	N	Y	N		
DH-8	N	Y	N	N	Y	Y	N	N	Y	N		
DH-9	N	Y	N	N	N	Y	N	N	Y	Y	PVC casing is completed below ground surface (poor well completion), TD > reported	Raise/extend well casing
EH-100	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-101	N	Y	N	Y	N	Y	N	N	Y	Y	Bent lock latch on 50 gal drum cover, drum has many dents overall function is ok, TD > reported	Replace and modernize surface casing
EH-102	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-103	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-104	N	Y	N	N	N	Y	N	N	Y	N		
EH-106	N	Y	Y	Y	N	Y	N	N	Y	N	Bailed out prior to operating / lid not bolted down / flush mount	Repair threads or replace flush mount
EH-107	N	Y	N	Y	N	Y	N	N	Y	Y	Bolts Stripped, TD > reported	Repair threads or replace flush mount
EH-109	N	Y	N	N	N	Y	N	N	Y	N		
EH-110	N	Y	Y	N	N	Y	N	N	Y	Y	Standing water inside casing - flush mount does not seal, TD > reported	Replace flush mount gasket
EH-111	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-112	N	N	N	N	N	Y	N	N	Y	N	Missing survey mark	Mark added on N side of casing
EH-113	Y	Y	N	N	N	Y	N	N	Y	N	Flush mount stripped bolts	Replace bolts, repair threads, or replace flush mount
EH-114	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-115	N	Y	N	Y	N	Y	N	N	Y	Y	Threads do not engage on flush mount, TD > reported	Replace bolts, repair threads, or replace flush mount
EH-116	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-117	N	Y	N	N	N	Y	N	N	Y	N		
EH-118	N	Y	N	N	N	Y	N	N	Y	N		
EH-119	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-120	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-121	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-122	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-123	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-124	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-125	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-126	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-127	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-128	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-129	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-130	N	Y	N	N	N	Y	N	N	Y	N		
EH-131	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-132	Y	Y	N	N	N	Y	N	N	Y	Y	Hinge on protective casing lid broken, TD > reported	Repair or replace as necessary
EH-133	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-134	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-135	Y	Y	N	N	N	Y	N	N	Y	N	Cattle damage needs new cap	Repair or replace as necessary
EH-136	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-137	N	Y	N	N	N	Y	N	N	Y	N		
EH-50	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-51	N	Y	N	N	N	Y	N	N	Y	N		
EH-52	N	Y	N	N	N	Y	N	N	Y	N		
EH-53	Y	Y	N	N	N	Y	N	N	Y	Y	Slightly bent lock tab on lid, casing slightly off - vertical function is still ok / Slip cap is broken taped back together, TD > reported	Replace well cap
EH-54	N	Y	N	N	N	Y	N	N	Y	N		
EH-57A	N	Y	N	N	N	Y	N	N	Y	N		
EH-58	Y	Y	N	N	N	Y	N	N	Y	Y	Upper portion of PVC well casing is broken, but slip cap covers missing portion, TD > reported	Repair or replace as necessary
EH-59	N	Y	N	N	N	Y	N	N	Y	N		
EH-60	N	Y	N	N	N	Y	N	N	Y	N		
EH-61	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-62	N	Y	N	N	N	Y	N	N	Y	Y	Possible sedimentation	Redevelop well

Well Name	Casing Damage	MP Mark	Standing/Ponded Water	Other Damage	Frost Heaving	Lock Present	Well Subsidence	Damage Apron	Measured TD	Change in TD	Comments	Recommended Corrective Action
EH-63	Y	Y	Y	N	N	Y	N	N	Y	N	Bolts are stripped for lid / Standing water inside casing	Replace bolts, repair threads, or replace flush mount and gasket as necessary
EH-64	N	Y	N	N	N	Y	N	N	Y	N		
EH-65	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-66	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-67	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
EH-68	N	Y	N	N	N	Y	N	N	Y	Y	TD < reported	sedimentation Possible or Original Measurement Inaccurate
EH-69	N	Y	N	N	Y	Y	Y	N	Y	Y	Possible frost heaving or subsidence / concrete apron off level	Replace concrete apron
MW-1	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
MW-10	N	Y	N	N	N	Y	N	N	Y	N		
MW-11	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
MW-2	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
MW-3	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
MW-4	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
MW-5	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
MW-6	N	Y	N	N	N	Y	N	N	Y	N		
MW-7	N	Y	N	N	N	Y	N	N	Y	N		
MW-8	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
MW-9	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
SDMW-1	N	Y	N	N	N	Y	N	N	Y	N		
SDMW-2	N	Y	N	N	N	Y	N	N	Y	N		
SDMW-3	N	Y	N	N	N	Y	N	N	Y	N		
SDMW-4	N	Y	N	N	N	Y	N	N	Y	Y	TD > reported	
SDMW-5	N	Y	N	N	N	Y	N	N	Y	N		
SPAR-3	N	Y	N	N	N	N	N	N	Y	Y	Still set up as sparge well. Well above protective casing, TD > reported	Replace/modernize as necessary
STW-1	N	Y	N	N	N	Y	N	N	Y	N		
STW-4	N	Y	N	N	N	Y	N	N	Y	N		
STW-7	N	Y	N	N	N	Y	N	N	Y	N		
STW-8	N	Y	N	N	N	Y	N	N	Y	N		
STW-9	N	Y	N	N	N	Y	N	N	Y	N		
TW-1	N	Y	N	Y	N	Y	N	N	Y	N	Cap missing - 4.5 inch well	Order specialized cap for well

Acronym Legend:
MP: Monitoring point, point on top of well casing from which TD and SWL measurements are taken.
SWL: Static water level, referenced in feet below monitoring point.
TD: Total well depth, referenced from monitoring point.
Summ7: Comprehensive summary of Asarco East Helena monitoring and residential wells, including well characteristics.

TABLE 2. TOTAL DEPTH COMPARISON

Site Designation	NOVEMBER 2009 SWL (ft)	NOVEMBER 2009 TD (ft)	WellSumm7 TD (ft)	Difference Between Summ7 and November 2009 (ft)	November 2009 TD Percent of Summ7 TD (%)	Reasons for Differences
APSD-1	8.60	14.10	14.18	-0.08	99.4%	
APSD-10	6.14	17.00	17.54	-0.54	96.9%	
APSD-11	7.77	18.20	17.99	0.21	101.2%	
APSD-12	5.02	17.30	17.00	0.30	101.8%	
APSD-15	9.35	27.10	27.45	-0.35	98.7%	
APSD-16	Not Measured	26.10	26.91	-0.81	97.0%	
APSD-2	12.85	24.90	24.12	0.78	103.2%	
APSD-3	11.34	16.40	16.92	-0.52	96.9%	
APSD-4	10.29	15.25	15.30	-0.05	99.7%	
APSD-6	7.19	26.00	--	--	--	No well log on record
APSD-7	7.40	17.50	17.58	-0.08	99.5%	
APSD-8	6.92	16.40	16.34	0.06	100.4%	
APSD-9	6.35	17.10	17.45	-0.35	98.0%	
DH-1	35.65	51.32	51.78	-0.46	99.1%	
DH-10A	10.95	12.50	10.78	1.72	116.0%	Original Measurement Precision/Inaccurate Tape
DH-11	14.16	31.00	31.13	-0.13	99.6%	
DH-12	28.77	30.30	28.92	1.38	104.8%	
DH-13	28.26	38.30	44.76	-6.46	85.6%	Possible siltation
DH-15	14.09	50.33	51.06	-0.73	98.6%	
DH-17	28.70	42.80	41.24	1.56	103.8%	Original Measurement Precision/Inaccurate Tape
DH-18	27.00	62.90	63.10	-0.20	99.7%	
DH-19R	14.25	24.80	24.70	0.10	100.4%	
DH-2	57.13	64.43	67.13	-2.70	96.0%	Possible screen damage - silica sand reported in well
DH-20	14.75	31.75	31.76	-0.01	100.0%	
DH-21	29.58	35.50	36.68	-1.18	96.8%	
DH-23	11.86	19.70	19.82	-0.12	99.4%	
DH-24	27.55	36.20	35.15	1.05	103.0%	Original Measurement Precision/Inaccurate Tape
DH-27	12.76	28.80	29.30	-0.50	98.3%	
DH-29	10.40	20.20	20.35	-0.15	99.3%	
DH-3	28.28	54.36	55.37	-1.01	98.2%	Possible siltation
DH-30	13.76	24.20	23.29	0.91	103.9%	
DH-31	Not Measured	35.27	35.25	0.02	100.1%	
DH-33	31.64	37.00	36.67	0.33	100.9%	
DH-34	29.24	36.50	36.57	-0.07	99.8%	
DH-35	31.89	35.80	35.88	-0.08	99.8%	
DH-36	27.00	32.90	33.31	-0.41	98.8%	
DH-37	29.09	32.90	32.62	0.28	100.9%	
DH-38	30.93	31.40	31.48	-0.08	99.7%	

Site Designation	NOVEMBER 2009 SWL (ft)	NOVEMBER 2009 TD (ft)	WellSumm7 TD (ft)	Difference Between Summ7 and November 2009 (ft)	November 2009 TD Percent of Summ7 TD (%)	Reasons for Differences
DH-4	9.63	24.00	23.68	0.32	101.4%	
DH-42	29.40	39.50	38.75	0.75	101.9%	
DH-47	7.38	17.90	17.43	0.47	102.7%	
DH-49	31.20	37.30	36.50	0.80	102.2%	
DH-5	13.05	18.30	17.56	0.74	104.2%	
DH-50	31.12	36.60	36.59	0.01	100.0%	
DH-51	30.03	36.40	36.13	0.27	100.7%	
DH-52	6.31	20.10	19.48	0.62	103.2%	
DH-53	8.84	19.40	19.60	-0.20	99.0%	
DH-54	19.69	29.80	29.16	0.64	102.2%	
DH-55	79.70	96.00	95.63	0.37	100.4%	
DH-56	77.57	88.00	87.55	0.45	100.5%	
DH-57	27.13	31.00	30.31	0.69	102.3%	
DH-58	16.32	26.70	26.16	0.54	102.1%	
DH-59	15.52	26.10	26.40	-0.30	98.9%	
DH-6	14.12	28.30	24.69	3.61	114.6%	Unknown (Possible undocumented extension of well)
DH-62	41.04	77.70	77.40	0.30	100.4%	
DH-63	33.15	41.68	41.17	0.51	101.2%	
DH-64	30.14	57.40	57.28	0.12	100.2%	
DH-65	61.67	74.00	72.49	1.51	102.1%	Original Measurement Precision/Inaccurate Tape
DH-66	37.86	50.20	50.00	0.20	100.4%	
DH-67	29.07	49.00	48.00	1.00	102.1%	Original Measurement Precision/Inaccurate Tape
DH-68	42.16	53.00	52.90	0.10	100.2%	
DH-69	32.84	42.50	42.55	-0.05	99.9%	
DH-7	21.85	31.00	30.33	0.67	102.2%	
DH-70	13.79	33.00	32.76	0.24	100.7%	
DH-71	29.57	36.60	36.41	0.19	100.5%	
DH-8	38.82	49.20	49.63	-0.43	99.1%	
DH-9	10.90	12.00	10.64	1.36	112.8%	Original Measurement Precision/Inaccurate Tape
EH-100	22.93	62.70	60.73	1.97	103.2%	Original Measurement Precision/Inaccurate Tape
EH-101	14.10	48.80	46.11	2.69	105.8%	Original Measurement Precision/Inaccurate Tape
EH-102	9.94	36.50	34.54	1.96	105.7%	Original Measurement Precision/Inaccurate Tape
EH-103	21.59	78.10	76.70	1.40	101.8%	Original Measurement Precision/Inaccurate Tape
EH-104	26.18	48.20	47.79	0.41	100.9%	
EH-106	22.35	46.30	45.82	0.48	101.0%	
EH-107	18.49	79.50	77.88	1.62	102.1%	Original Measurement Precision/Inaccurate Tape
EH-109	20.70	65.20	64.79	0.41	100.6%	
EH-110	16.20	55.90	54.78	1.12	102.0%	Original Measurement Precision/Inaccurate Tape
EH-111	21.00	49.80	48.78	1.02	102.1%	Original Measurement Precision/Inaccurate Tape
EH-112	31.05	41.40	40.68	0.72	101.8%	
EH-113	19.86	44.40	43.70	0.70	101.6%	
EH-114	24.24	55.25	53.62	1.63	103.0%	Original Measurement Precision/Inaccurate Tape
EH-115	25.10	49.70	48.70	1.00	102.1%	Original Measurement Precision/Inaccurate Tape
EH-116	22.95	51.60	49.81	1.79	103.6%	Original Measurement Precision/Inaccurate Tape

Site Designation	NOVEMBER 2009 SWL (ft)	NOVEMBER 2009 TD (ft)	WellSumm7 TD (ft)	Difference Between Summ7 and November 2009 (ft)	November 2009 TD Percent of Summ7 TD (%)	Reasons for Differences
EH-117	20.78	45.30	44.84	0.46	101.0%	
EH-118	27.61	52.70	52.38	0.32	100.6%	
EH-119	25.81	74.40	70.58	3.82	105.4%	Original Measurement Precision/Inaccurate Tape
EH-120	25.18	68.90	67.59	1.31	101.9%	Original Measurement Precision/Inaccurate Tape
EH-121	26.36	74.50	71.49	3.01	104.2%	Original Measurement Precision/Inaccurate Tape
EH-122	22.59	69.30	67.45	1.85	102.7%	Original Measurement Precision/Inaccurate Tape
EH-123	34.03	63.70	60.00	3.70	106.2%	Original Measurement Precision/Inaccurate Tape
EH-124	29.67	78.30	74.00	4.30	105.8%	Original Measurement Precision/Inaccurate Tape
EH-125	30.17	73.10	69.00	4.10	105.9%	Original Measurement Precision/Inaccurate Tape
EH-126	46.18	77.20	73.00	4.20	105.8%	Original Measurement Precision/Inaccurate Tape
EH-127	25.78	76.80	73.00	3.80	105.2%	Original Measurement Precision/Inaccurate Tape
EH-128	40.55	47.80	46.67	1.13	102.4%	Original Measurement Precision/Inaccurate Tape
EH-129	46.73	94.40	92.76	1.64	101.8%	Original Measurement Precision/Inaccurate Tape
EH-130	38.66	81.00	80.57	0.43	100.5%	
EH-131	27.24	88.00	86.87	1.13	101.3%	Original Measurement Precision/Inaccurate Tape
EH-132	53.70	84.50	82.49	2.01	102.4%	Original Measurement Precision/Inaccurate Tape
EH-133	48.68	99.60	97.77	1.83	101.9%	Original Measurement Precision/Inaccurate Tape
EH-134	46.31	67.80	66.69	1.11	101.7%	Original Measurement Precision/Inaccurate Tape
EH-135	24.02	68.40	67.71	0.69	101.0%	
EH-136	24.41	78.80	76.50	2.30	103.0%	Original Measurement Precision/Inaccurate Tape
EH-137	30.89	88.00	87.50	0.50	100.6%	
EH-50	22.41	46.80	45.57	1.23	102.7%	Original Measurement Precision/Inaccurate Tape
EH-51	13.68	31.50	31.06	0.44	101.4%	
EH-52	7.73	13.00	13.00	0.00	100.0%	
EH-53	21.15	38.10	36.08	2.02	105.6%	Original Measurement Precision/Inaccurate Tape
EH-54	8.38	18.80	17.91	0.89	105.0%	
EH-57A	27.93	46.20	45.60	0.60	101.3%	
EH-58	16.59	33.80	32.30	1.50	104.6%	Original Measurement Precision/Inaccurate Tape
EH-59	7.90	17.10	17.57	-0.47	97.3%	
EH-60	18.65	29.60	28.62	0.98	103.4%	
EH-61	20.25	47.80	45.41	2.39	105.3%	Original Measurement Precision/Inaccurate Tape
EH-62	23.71	44.50	50.77	-6.27	87.7%	Possible siltation
EH-63	18.30	35.50	34.51	0.99	102.9%	
EH-64	24.10	38.30	37.41	0.89	102.4%	
EH-65	20.86	36.20	34.76	1.44	104.1%	Original Measurement Precision/Inaccurate Tape
EH-66	26.16	41.30	40.00	1.30	103.3%	Original Measurement Precision/Inaccurate Tape
EH-67	23.54	40.40	37.00	3.40	109.2%	Original Measurement Precision/Inaccurate Tape
EH-68	10.05	25.40	26.50	-1.10	95.8%	Original Measurement Precision/Inaccurate Tape
EH-69	19.23	37.60	35.00	2.60	107.4%	Original Measurement Precision/Inaccurate Tape
MW-1	50.86	71.90	69.43	2.47	103.6%	Original Measurement Precision/Inaccurate Tape
MW-10	37.85	65.60	64.86	0.74	101.1%	
MW-11	62.33	75.00	72.52	2.48	103.4%	Original Measurement Precision/Inaccurate Tape
MW-2	33.55	69.50	67.76	1.74	102.6%	Original Measurement Precision/Inaccurate Tape
MW-3	29.84	51.40	49.51	1.89	103.8%	Original Measurement Precision/Inaccurate Tape

Site Designation	NOVEMBER 2009 SWL (ft)	NOVEMBER 2009 TD (ft)	WellSumm7 TD (ft)	Difference Between Summ7 and November 2009 (ft)	November 2009 TD Percent of Summ7 TD (%)	Reasons for Differences
MW-4	44.69	67.70	66.44	1.26	101.9%	Original Measurement Precision/Inaccurate Tape
MW-5	52.25	69.00	67.89	1.11	101.6%	Original Measurement Precision/Inaccurate Tape
MW-6	25.33	43.00	42.62	0.38	100.9%	
MW-7	Not Measured	59.66	59.30	0.36	100.6%	
MW-8	50.95	67.80	66.65	1.15	101.7%	Original Measurement Precision/Inaccurate Tape
MW-9	56.85	74.00	72.77	1.23	101.7%	Original Measurement Precision/Inaccurate Tape
SDMW-1	31.70	48.10	49.00	-0.90	98.2%	
SDMW-2	31.30	44.30	45.00	-0.70	98.4%	
SDMW-3	28.39	41.80	42.00	-0.20	99.5%	
SDMW-4	27.41	45.30	42.00	3.30	107.9%	Original Measurement Precision/Inaccurate Tape
SDMW-5	28.26	51.20	52.00	-0.80	98.5%	
SPARGE 3	31.78	41.50	39.64	1.86	104.7%	Original Measurement Precision/Inaccurate Tape
STW-1	13.25	41.10	40.44	0.66	101.6%	
STW-4	30.16	40.40	39.50	0.90	102.3%	
STW-7	31.39	42.00	42.29	-0.29	99.3%	
STW-8	29.10	40.27	40.27	0.00	100.0%	
STW-9	30.20	42.50	42.25	0.25	100.6%	
TW-1	31.21	50.00	49.04	0.96	102.0%	

Acronym Legend:
MP: Monitoring point, point on top of well casing from which TD and SWL measurements are taken.
SWL: Static water level, referenced in feet below monitoring point.
TD: Total well depth, referenced from monitoring point.
Summ7: Comprehensive summary table of Asarco East Helena monitoring and residential wells, including well characteristics.

ATTACHMENT 1

EPA COMMENTS TO THE 2009 MONITORING PLAN

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8ENF-RC

April 27, 2009

Mr. Jon Nickel
ASARCO East Helena Plant
100 Smelter Road
P.O. Box 1230
East Helena, MT 59635

RE: Updated Monitoring Program (March 2009)
Asarco East Helena Facility, March 19, 2009

Dear Mr. Nickel:

We have reviewed the updated monitoring program for the Asarco East Helena smelter facility and have the enclosed comments. Please proceed with the annual and semi-annual monitoring proposed for May 2009 which will include the newly installed wells, amend Tables D and F to exclude arsenic and selenium speciation and add analyses for gold and tellurium to Tables B, D, and F. Also, expand Table E to report the same list of metals in Tables B, D and F for both total and dissolved metals.

Please amend the monitoring plan to address the enclosed comments and resubmit it for EPA review and approval by May 25, 2009. If you have questions on this letter or any related matter, please contact me directly at (303) 312-6503.

Sincerely,

Linda Jacobson

Linda Jacobson
RCRA Enforcement

cc: Denise Kirkpatrick, MDEQ
Randy Breeden, EPA-HW

COMMENTS ON UPDATED MONITORING PROGRAM
ASARCO EAST HELENA SMELTER FACILITY
MARCH 19, 2009

1) Please add figures for a) wells in the monthly sampling program, b) wells included in the annual sampling program, c) wells included in the quarterly monitoring sampling program, d) wells included in the semi-annual long-term monitoring program, e) wells monitored for the CAMUs, and f) surface water sampling locations. We are requesting creation and submission of a separate figure for each.

2) Please remove arsenic and selenium speciation from Tables D and F and add analyses for gold and tellurium to Tables B, D, and F.

3) Expand Tables E to report the same list of metals in Tables B, D and F for both total and dissolved metals, including gold and tellurium.

4) Expand the monitoring program to describe the sample collection and preservation methods, field recordation requirements, water level monitoring procedures, well purging and field parameter stabilization methods.

5) Identify the contractors and labs to be used.

6) Amend the text to indicate that a potentiometric maps will be developed using data collected in each semi-annual sampling event and that data will be included in the monthly progress reports on disk and in an excel format.

7) Propose a well integrity evaluation to be conducted for all wells in the ground water network which will be conducted within one month following completion of the stack demolition in 2009. This well usability assessment must include, at a minimum, the following components:
   a) visually inspect each well for evidence of damage or deterioration, including survey mark present, standing or ponded water, evidence of collision or damage, evidence of frost heaving, evidence of casing degradation, lock in place, evidence of well subsidence, condition of well apron;
   b) obtain the depth to water and depth to bottom of well;
   c) for wells with dedicated pumps, remove and inspect the pump and measure the total depth of the well and service or replace any malfunctioning pumps;
   d) sound each well;
   e) redevelop any monitoring well when either of the two conditions occur: 1) silt or sediment is determined to have entered the well and has accumulated to a depth of one foot, or 20% of the screen length, whichever is less; or 2) yield from the well is noted to have significantly decreased or recovery time has significantly increased, indicating clogging of the screen and/or sand filter

ATTACHMENT 2

ASARCO'S COMMENT RESPONSE LETTER

May 12, 2009

Ms. Linda Jacobson
RCRA Enforcement
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

RE: RESPONSE TO APRIL 27, 2009 EPA COMMENTS ON UPDATED MONTIORING PROGRAM.

Dear Ms. Jacobson:

Below are the Asarco's responses to EPAs comments on the Updated Monitoring Program (March 2009), renamed 2009 Groundwater and Surface Water Sampling and Monitoring Plan, Asarco East Helena. Due to the amount of the additional information requested, the monitoring program has been modified to a report format and numerous tables and figures have been omitted and/or added to the work plan. The specifics of the program have not changed beyond what was requested by EPA and proposed by Asarco in our responses.

The revised 2009 Groundwater and Surface Water Sampling and Monitoring Plan and comments are attached for your review and approval.

Comment 1: Please add figures for a) wells in the monthly sampling program, b) wells included in the annual sampling program, c) wells included in the quarterly monitoring sampling program, d) wells included in the semi-annual long-term monitoring program, e) wells monitored for the CAMUs, and f) surface water sampling locations. We are requesting creation and submission of a separate figure for each.

Response: Asarco has incorporated the requested figures into the revised monitoring program.

Comment 2: Please remove arsenic and selenium speciation from Tables D and F and add analyses for gold and tellurium to Tables B, D, and F.

Comment 3: Expand Tables E to report the same list of metals in Tables B, D, and F for both total and dissolved metals, including gold and tellurium.

Response to Comments 2 and 3: The monitoring program has been revised to remove arsenic and selenium speciation from the semi-annual long-term monitoring well sample program and CAMU monitoring program. In addition, the supplemental metals list has been added to the surface water sample program. The supplemental metals list was updated to include gold and tellurium.

Please note that the CAMU parameter list has historically omitted total suspended solids (TSS) and bicarbonate. Asarco is requesting that TSS and bicarbonate be added to the CAMU parameter list in order to have consistency with the other monitoring programs.

Based on the above changes the number of parameter lists will be reduced in the Updated Monitoring Program as follows:

Table A: Monthly Residential Monitoring – No changes,

Table B: Annual Residential Monitoring, Semi-Annual Long-Term Monitoring Well Sample Program, Surface Water Monitoring Program, and CAMU Quarterly Monitoring,

Table C: Quarterly Monitoring Well Sample Program

Comment 4: Expand the monitoring program to describe the sample collection and preservation methods, field recordation requirements, water level monitoring procedures, well purging and field parameter stabilization methods.

Response: The monitoring program has been expanded to describe the requested field methods and procedures.

Comment 5: Identify the contractors and labs to be used.

Response: Asarco has contracted with Hydrometrics Inc to conduct the groundwater and surface water sampling associated with the monitoring program for the year of 2009. Energy Laboratories has been contracted to conduct the analytical analysis for the 2009 monitoring program.

Comment 6: Amend the text to indicate that a potentiometric maps will be developed using data collected in each semi-annual sampling event and that data will be included in the monthly progress reports on disk and in an excel format.

Response: The text has been amended to indicate that a potentiometric map will be developed using data collected in each semi-annual sampling event and the data will be included on disk in excel format.

Comment 7: Propose a well integrity evaluation to be conducted for all wells in the ground water network which will be conducted within one month following completion of the stack demolition in 2009. This well usability assessment must include, at a minimum, the following components:

a) visually inspect each well for evidence of damage or deterioration, including survey mark present, standing or ponded water, evidence of collision or damage, evidence of frost heaving, evidence of casing degradation, lock in place, evidence of well subsidence, condition of well apron;
b) obtain the depth to water and depth to bottom of well;
c) for wells with dedicated pumps, remove and inspect the pump and measure the total depth of the well and service or replace any malfunctioning pumps;
d) sound each well;
e) redevelop any monitoring well when either of the two conditions occur: 1) silt or sediment is determined to have entered the well and has accumulated to a depth of one foot, or 20% of the screen length, whichever is less; or 2) yield from the well is noted to have significantly decreased or recovery time has significantly increased, indicating clogging of the screen and/or sand filter

Response: Asarco proposes a well integrity evaluation with a few modifications from what is outlined in Comment 7. The well integrity evaluation will be conducted on all wells in the groundwater network and will occur in concurrence with the November Semi-Annual Long-Term Monitoring Program. The evaluation will consist of the following tasks:

a) Visually inspect each well for evidence of damage or deterioration, including survey mark present, standing or ponded water, evidence of collision or damage, evidence of frost heaving, evidence of casing degradation, lock in place, evidence of well subsidence, condition of well apron;

b) Obtain the depth to water and depth to bottom of well (sound the wells); and

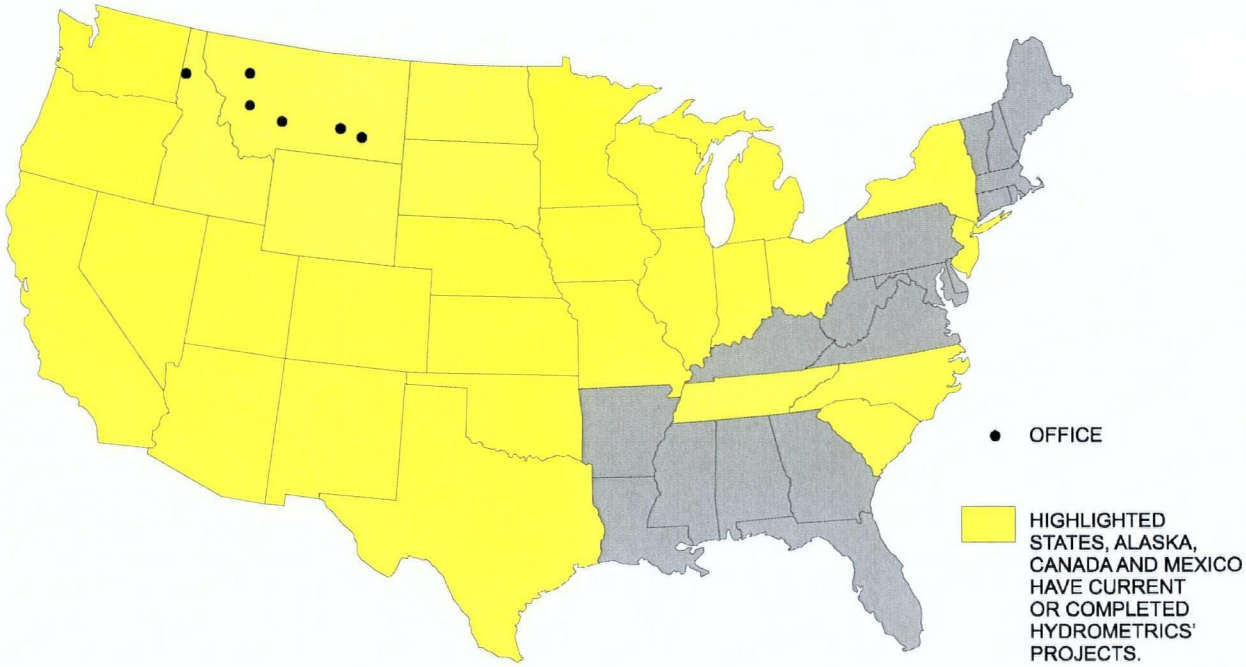
c) Redevelop any monitoring well when either of the two conditions occur: 1) silt or sediment is determined to have entered the well and has accumulated to a depth of one foot, or 20% of the screen length, whichever is less; or 2) yield from the well is noted to have significantly decreased or recovery time has significantly increased, indicating clogging of the screen and/or sand filter.

There are no wells in the groundwater monitoring network that have dedicated pumps and therefore, item c in Comment 7 was omitted. Like wise, it is Asarco's understanding that sounding a well is the same as obtaining the depth to water and/or total depth of the well, which is the reasoning for omitting item d from Comment 7.

Scheduling the well integrity evaluation to coincide with the November monitoring will significantly reduce the cost of the evaluation. To do the evaluation separately would take two contracted field personnel approximately 3 weeks to complete. If the evaluation were conducted along with the November sampling event (as proposed), the well integrity evaluation would only increase the monitoring approximately 1 week. This is a savings of approximately $13,000 and the schedule should be within one to two months from that suggested in Comment 7.

Sincerely

Jon Nickel



HYDROMETRICS, INC. OFFICES

MONTANA

HELENA (Corporate)
3020 Bozeman Avenue
Helena, MT 59601
Phone: (406) 443-4150
FAX: (406) 443-4155

BILLINGS
5602 Hesper Road
Billings, MT 59106
Phone: (406) 656-1172
FAX: (406) 656-8912

COLSTRIP
Phone: (406) 656-8305
Fax: (406) 656-8912

KALISPELL
300 Learn Lane
Kalispell, MT 59901
Phone: (406) 552-4510
Fax: (406) 552-4706

MISSOULA
667 East Beckwith
Missoula, MT 59801
Phone: (406) 721-8243
FAX: (406) 542-2619

WHITEFISH
14 West 2nd Street, Suite 2
Whitefish, MT 59937
Phone: (406) 862-4937
Fax: (406) 862-4938

IDAHO

COEUR D'ALENE
2736 White Pines Drive
Coeur d'Alene, ID 83815
Phone: (208) 660-8548
Fax: (208) 765-5286

January 29, 2010

David Jensen
P. O. Box 1021
401 Gail Street
East Helena, Montana 59635

Dear Mr. Jensen:

Enclosed are the analytical results for the water samples that were collected from your 401 Gail Street ground water well on January 5, 2010. All the results are reported in milligrams per liter, unless otherwise noted. The physical parameters are reported in the units noted on the attached laboratory analytical report. "ND" indicates that the parameter was not detected at the reporting limit.

Based on the analytical results, the water quality of the well is better than the Montana Human Health Standards and Federal Maximum Contaminant Level (MCL)/Action Levels for the constituents tested. These recent water quality results are consistent with previous monitoring data from your site and do not indicate significant changes from historical baseline data.

If you have any questions about the enclosed water quality results, please feel free to contact me at 227-4529.

Sincerely,

Jon Nickel
Consultant

Enclosures
Cc: via electronic mail:
Cindy Brooks – METG, Trustee for the Montana Environmental Custodial Trust
Marc Weinreich - METG, Trustee for the Montana Environmental Custodial Trust
Bob Anderson - Hydrometrics

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Client: MT ENV Trust Goup LLC,
Client Sample ID EHR-0110-300 Jensen Residence
Lab ID: H10010037-001 401 Gail Street
Matrix: Groundwater

Project: Long-Term RI/FS Res. Well Sampling - Jan. 2010
Collection Date: 01/05/10 08:15 **DateReceived:** 01/05/10
Report Date: 01/21/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.		0.1		A4500-H B	01/05/10 15:52 / JG		PH2_100105A	5	100105A-PH-W
Conductivity	756	umhos/cm		1		A2510 B	01/05/10 15:22 / JG		COND_100105A	4	00105A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/06/10 08:46 / JG	01/06/10 08:49	-124 (14410200)_100106A	14	7766
Solids, Total Dissolved TDS @ 180 C	568	mg/L		10		A2540 C	01/06/10 09:02 / JG	01/06/10 08:33	J-124 (14410200)_100106B	6	7765
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		1		A2320 B	01/06/10 18:55 / hm		MAN-TECH_100106A	21	R59469
Bicarbonate as HCO3	150	mg/L		1		A2320 B	01/06/10 18:55 / hm		MAN-TECH_100106A	21	R59469
Chloride	28	mg/L		1		E300.0	01/06/10 16:42 / hm		IC101-H_100106A	27	R59518
Sulfate	240	mg/L		1		E300.0	01/06/10 16:42 / hm		IC101-H_100106A	27	R59518
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Antimony	ND	mg/L		0.003		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Arsenic	ND	mg/L		0.002		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Barium	ND	mg/L		0.1		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Beryllium	ND	mg/L		0.001		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Cadmium	ND	mg/L		0.001		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Calcium	95	mg/L		1		E200.7	01/08/10 11:09 / sld		ICP1-HE_100108A	29	R59543
Chromium	ND	mg/L		0.001		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Cobalt	ND	mg/L		0.01		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Copper	0.004	mg/L		0.001		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Gold	ND	mg/L		0.01		E200.7	01/08/10 11:09 / sld		ICP1-HE_100108A	29	R59543
Iron	0.03	mg/L		0.02		E200.7	01/08/10 11:09 / sld		ICP1-HE_100108A	29	R59543
Lead	ND	mg/L		0.005		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Magnesium	20	mg/L		1		E200.7	01/08/10 11:09 / sld		ICP1-HE_100108A	29	R59543
Manganese	0.02	mg/L		0.01		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Mercury	ND	mg/L		0.001		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Nickel	ND	mg/L		0.01		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Potassium	6	mg/L		1		E200.7	01/11/10 13:03 / sld		ICP1-HE_100111B	19	R59608
Selenium	0.016	mg/L		0.001		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Silver	ND	mg/L		0.005		E200.8	01/10/10 02:28 / dck		ICPMS204-B_100110A	19	R59560

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Client: MT ENV Trust Goup LLC,
Client Sample ID EHR-0110-300
Lab ID: H10010037-001
Matrix: Groundwater

Project: Long-Term RI/FS Res. Well Sampling - Jan. 2010
Collection Date: 01/05/10 08:15 **DateReceived:** 01/05/10
Report Date: 01/21/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	24	mg/L		1		E200.7	01/08/10 11:09 / sld		ICP1-HE_100108A	29	R59543
Tellurium	ND	mg/L		0.1		E200.7	01/08/10 11:09 / sld		ICP1-HE_100108A	29	R59543
Thallium	ND	mg/L		0.001		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Vanadium	ND	mg/L		0.01		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546
Zinc	0.04	mg/L		0.01		E200.8	01/09/10 08:03 / dck		ICPMS204-B_100109A	23	R59546

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

January 29, 2010

Pat Foley
203 Gail Street
P. O. Box 2254
East Helena, Montana 59635

Dear Mr. Foley:

Enclosed are the analytical results for the water samples (both original and duplicate) that were collected from the 203 Gail Street ground water well on January 5, 2010. All the results are reported in milligrams per liter, unless otherwise noted. The physical parameters are reported in the units noted on the attached laboratory analytical report. "ND" indicates that the parameter was not detected at the reporting limit.

Based on the analytical results, the water quality of the well is better than the Montana Human Health Standards and Federal Maximum Contaminant Level (MCL)/Action Levels for the constituents tested. These recent water quality results are consistent with previous monitoring data from your site and do not indicate significant changes from historical baseline data.

If you have any questions about the enclosed water quality results, please feel free to contact me at 227-4529.

Sincerely,

Jon Nickel
Consultant

Enclosures
Cc: via electronic mail:
Cindy Brooks – METG, Trustee for the Montana Environmental Custodial Trust
Marc Weinreich - METG, Trustee for the Montana Environmental Custodial Trust
Bob Anderson - Hydrometrics

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Client: MT ENV Trust Goup LLC,
Client Sample ID EHR-0110-301 Foley Residence (Original)
Lab ID: H10010037-002 203 Gail Street
Matrix: Groundwater

Project: Long-Term RI/FS Res. Well Sampling - Jan. 2010
Collection Date: 01/05/10 09:00 **DateReceived:** 01/05/10
Report Date: 01/21/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	01/05/10 15:53 / JG		PH2_100105A	6	100105A-PH-W
Conductivity	279	umhos/cm		1		A2510 B	01/05/10 15:25 / JG		COND_100105A	5	00105A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/06/10 08:47 / JG	01/06/10 08:49	-124 (14410200)_100106A	16	7766
Solids, Total Dissolved TDS @ 180 C	188	mg/L		10		A2540 C	01/06/10 09:04 / JG	01/06/10 08:33	J-124 (14410200)_100106B	9	7765
INORGANICS											
Alkalinity, Total as CaCO3	78	mg/L		1		A2320 B	01/06/10 19:02 / hm		MAN-TECH_100106A	22	R59469
Bicarbonate as HCO3	95	mg/L		1		A2320 B	01/06/10 19:02 / hm		MAN-TECH_100106A	22	R59469
Chloride	4	mg/L		1		E300.0	01/06/10 17:31 / hm		IC101-H_100106A	30	R59518
Sulfate	53	mg/L		1		E300.0	01/06/10 17:31 / hm		IC101-H_100106A	30	R59518
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Antimony	ND	mg/L		0.003		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Arsenic	ND	mg/L		0.002		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Barium	ND	mg/L		0.1		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Beryllium	ND	mg/L		0.001		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Cadmium	ND	mg/L		0.001		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Calcium	29	mg/L		1		E200.7	01/08/10 11:12 / sld		ICP1-HE_100108A	30	R59543
Chromium	ND	mg/L		0.001		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Cobalt	ND	mg/L		0.01		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Copper	0.022	mg/L		0.001		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Gold	ND	mg/L		0.01		E200.7	01/08/10 11:12 / sld		ICP1-HE_100108A	30	R59543
Iron	ND	mg/L		0.02		E200.7	01/08/10 11:12 / sld		ICP1-HE_100108A	30	R59543
Lead	ND	mg/L		0.005		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Magnesium	7	mg/L		1		E200.7	01/08/10 11:12 / sld		ICP1-HE_100108A	30	R59543
Manganese	ND	mg/L		0.01		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Mercury	ND	mg/L		0.001		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Nickel	ND	mg/L		0.01		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Potassium	2	mg/L		1		E200.7	01/11/10 13:06 / sld		ICP1-HE_100111B	20	R59608
Selenium	ND	mg/L		0.001		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Silver	ND	mg/L		0.005		E200.8	01/10/10 02:33 / dck		ICPMS204-B_100110A	20	R59560

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Client: MT ENV Trust Goup LLC,
Client Sample ID EHR-0110-301
Lab ID: H10010037-002
Matrix: Groundwater

Project: Long-Term RI/FS Res. Well Sampling - Jan. 2010
Collection Date: 01/05/10 09:00 **DateReceived:** 01/05/10
Report Date: 01/21/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	14	mg/L		1		E200.7	01/08/10 11:12 / sld		ICP1-HE_100108A	30	R59543
Tellurium	ND	mg/L		0.1		E200.7	01/08/10 11:12 / sld		ICP1-HE_100108A	30	R59543
Thallium	ND	mg/L		0.001		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Vanadium	ND	mg/L		0.01		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546
Zinc	ND	mg/L		0.01		E200.8	01/09/10 08:44 / dck		ICPMS204-B_100109A	31	R59546

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Client: MT ENV Trust Goup LLC,
Client Sample ID EHR-0110-302 Foe
Lab ID: H10010037-003 Foley Residence (Duplicate)
Matrix: Groundwater 203 Gail Street

Project: Long-Term RI/FS Res. Well Sampling - Jan. 2010
Collection Date: 01/05/10 09:30 **DateReceived:** 01/05/10
Report Date: 01/21/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	01/05/10 15:57 / JG		PH2_100105A	8	100105A-PH-W
Conductivity	279	umhos/cm		1		A2510 B	01/05/10 15:28 / JG		COND_100105A	700	105A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/06/10 08:47 / JG	01/06/10 08:49	-124 (14410200)_100106A	17	7766
Solids, Total Dissolved TDS @ 180 C	186	mg/L		10		A2540 C	01/06/10 09:05 / JG	01/06/10 08:33	-124 (14410200)_100106B	10	7765
INORGANICS											
Alkalinity, Total as CaCO3	76	mg/L		1		A2320 B	01/06/10 19:08 / hm		MAN-TECH_100106A	23	R59469
Bicarbonate as HCO3	93	mg/L		1		A2320 B	01/06/10 19:08 / hm		MAN-TECH_100106A	23	R59469
Chloride	4	mg/L		1		E300.0	01/06/10 17:48 / hm		IC101-H_100106A	31	R59518
Sulfate	53	mg/L		1		E300.0	01/06/10 17:48 / hm		IC101-H_100106A	31	R59518
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Antimony	ND	mg/L		0.003		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Arsenic	ND	mg/L		0.002		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Barium	ND	mg/L		0.1		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Beryllium	ND	mg/L		0.001		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Cadmium	ND	mg/L		0.001		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Calcium	32	mg/L		1		E200.7	01/08/10 11:15 / sld		ICP1-HE_100108A	31	R59543
Chromium	ND	mg/L		0.001		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Cobalt	ND	mg/L		0.01		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Copper	0.022	mg/L		0.001		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Gold	ND	mg/L		0.01		E200.7	01/08/10 11:15 / sld		ICP1-HE_100108A	31	R59543
Iron	ND	mg/L		0.02		E200.7	01/08/10 11:15 / sld		ICP1-HE_100108A	31	R59543
Lead	ND	mg/L		0.005		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Magnesium	7	mg/L		1		E200.7	01/08/10 11:15 / sld		ICP1-HE_100108A	31	R59543
Manganese	ND	mg/L		0.01		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Mercury	ND	mg/L		0.001		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Nickel	ND	mg/L		0.01		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Potassium	2	mg/L		1		E200.7	01/11/10 13:09 / sld		ICP1-HE_100111B	21	R59608
Selenium	ND	mg/L		0.001		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A	32	R59546
Silver	ND	mg/L		0.005		E200.8	01/10/10 02:38 / dck		ICPMS204-B_100110A	21	R59560

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Client: MT ENV Trust Goup LLC,
Client Sample ID EHR-0110-302
Lab ID: H10010037-003
Matrix: Groundwater

Project: Long-Term RI/FS Res. Well Sampling - Jan. 2010
Collection Date: 01/05/10 09:30 **DateReceived:** 01/05/10
Report Date: 01/21/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	13	mg/L		1		E200.7	01/08/10 11:15 / sld		ICP1-HE_100108A : 31		R59543
Tellurium	ND	mg/L		0.1		E200.7	01/08/10 11:15 / sld		ICP1-HE_100108A : 31		R59543
Thallium	ND	mg/L		0.001		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A : 32		R59546
Vanadium	ND	mg/L		0.01		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A : 32		R59546
Zinc	ND	mg/L		0.01		E200.8	01/09/10 08:49 / dck		ICPMS204-B_100109A : 32		R59546

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

January 29, 2010

John Simac
2540 Wylie Drive
P. O. Box 59
East Helena, Montana 59635

Dear Mr. Simac:

Enclosed are the analytical results for the water samples that were collected from the 2540 Wylie Drive ground water well on January 29, 2010. Your irrigation well was not in service during the sampling event. All the results are reported in milligrams per liter, unless otherwise noted. The physical parameters are reported in the units noted on the attached laboratory analytical report. "ND" indicates that the parameter was not detected at the reporting limit.

Based on the analytical results, the water quality of the well is better than the Montana Human Health Standards and Federal Maximum Contaminant Level (MCL)/Action Levels for the constituents tested. These recent water quality results are consistent with previous monitoring data from your site and do not indicate significant changes from historical baseline data.

If you have any questions about the enclosed water quality results, please feel free to contact me at 227-4529.

Sincerely,

Jon Nickel
Consultant

Enclosures
Cc: via electronic mail:
Cindy Brooks – METG, Trustee for the Montana Environmental Custodial Trust
Marc Weinreich - METG, Trustee for the Montana Environmental Custodial Trust
Bob Anderson - Hydrometrics

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Client: MT ENV Trust Goup LLC,
Client Sample ID EHR-0110-303
Lab ID: H10010037-004
Matrix: Groundwater

Simac Residence Drinking Water
2540 Wylie Drive

Project: Long-Term RI/FS Res. Well Sampling - Jan. 2010
Collection Date: 01/05/10 10:00 **DateReceived:** 01/05/10
Report Date: 01/21/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	01/05/10 15:59 / JG		PH2_100105A	9	100105A-PH-W
Conductivity	471	umhos/cm		1		A2510 B	01/05/10 15:29 / JG		COND_100105A	800	105A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	01/06/10 08:48 / JG	01/06/10 08:49	-124 (14410200)_100106A	18	7766
Solids, Total Dissolved TDS @ 180 C	351	mg/L		10		A2540 C	01/06/10 09:07 / JG	01/06/10 08:33	-124 (14410200)_100106B	11	7765
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		1		A2320 B	01/06/10 19:32 / hm		MAN-TECH_100106A	26	R59469
Bicarbonate as HCO3	140	mg/L		1		A2320 B	01/06/10 19:32 / hm		MAN-TECH_100106A	26	R59469
Chloride	7	mg/L		1		E300.0	01/06/10 18:37 / hm		IC101-H_100106A	34	R59518
Sulfate	110	mg/L		1		E300.0	01/06/10 18:37 / hm		IC101-H_100106A	34	R59518
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Antimony	ND	mg/L		0.003		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Arsenic	ND	mg/L		0.002		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Barium	ND	mg/L		0.1		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Beryllium	ND	mg/L		0.001		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Cadmium	ND	mg/L		0.001		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Calcium	57	mg/L		1		E200.7	01/08/10 11:19 / sld		ICP1-HE_100108A	32	R59543
Chromium	ND	mg/L		0.001		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Cobalt	ND	mg/L		0.01		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Copper	0.001	mg/L		0.001		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Gold	ND	mg/L		0.01		E200.7	01/08/10 11:19 / sld		ICP1-HE_100108A	32	R59543
Iron	ND	mg/L		0.02		E200.7	01/08/10 11:19 / sld		ICP1-HE_100108A	32	R59543
Lead	ND	mg/L		0.005		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Magnesium	12	mg/L		1		E200.7	01/08/10 11:19 / sld		ICP1-HE_100108A	32	R59543
Manganese	ND	mg/L		0.01		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Mercury	ND	mg/L		0.001		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Nickel	ND	mg/L		0.01		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Potassium	5	mg/L		1		E200.7	01/11/10 13:12 / sld		ICP1-HE_100111B	22	R59608
Selenium	0.003	mg/L		0.001		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Silver	ND	mg/L		0.005		E200.8	01/10/10 02:43 / dck		ICPMS204-B_100110A	22	R59560

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT ENV Trust Goup LLC,
Client Sample ID EHR-0110-303
Lab ID: H10010037-004
Matrix: Groundwater

Project: Long-Term RI/FS Res. Well Sampling - Jan. 2010
Collection Date: 01/05/10 10:00 **DateReceived:** 01/05/10
Report Date: 01/21/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	18	mg/L		1		E200.7	01/08/10 11:19 / sld		ICP1-HE_100108A	32	R59543
Tellurium	ND	mg/L		0.1		E200.7	01/08/10 11:19 / sld		ICP1-HE_100108A	32	R59543
Thallium	ND	mg/L		0.001		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Vanadium	ND	mg/L		0.01		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546
Zinc	0.02	mg/L		0.01		E200.8	01/09/10 08:54 / dck		ICPMS204-B_100109A	33	R59546

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

VALIDATION SUMMARY

ASARCO EAST HELENA RCRA CONSENT DECREE

MONTHLY RESIDENTIAL WELL MONITORING PROGRAM

INORGANIC ANALYSES

NOVEMBER 2009 SAMPLE EVENT

ENERGY LABORATORY WORK ORDER NO. H09110290

Prepared for:
Mr. Marc Weinreich
Montana Environmental Trust Group
15001 Winged Bluff Lane
Draper, UT 84020

Prepared by:
Linda L. Tangen
6900 Cherry Blossom Lane
Albuquerque, NM 87111

January 2010

TABLE OF CONTENTS

LIST OF APPENDICES

GLOSSARY OF TERMS

CLP..... Contract Laboratory Program

COC..... Chain of Custody

CRDL..... Contract Required Detection Limit

DI..... Deionized Water

DIS..... Dissolved

DQO..... Data Quality Objective

ELI-Hel ..... Energy Laboratories, Inc., Helena, Montana

EPA..... U.S. Environmental Protection Agency

ICV ..... Initial Calibration Verification

IDL ..... Instrument Detection Limit

LCS..... Laboratory Control Sample

LFB..... Laboratory Fortified Blank

MS ..... Matrix Spike

NA ..... Not Applicable

PDLG..... Project Detection Limit Goal

QC ..... Quality Control

RCRA ..... Resource and Conservation Recovery Act

RPD ..... Relative Percent Difference

SC ..... Specific Conductivity

TDS ..... Total Dissolved Solids

SUMMARY

Groundwater samples were collected from East Helena residential groundwater wells on November 20, 2009 for the ASARCO East Helena Resource and Conservation Recovery Act (RCRA) Consent Decree's monthly monitoring program. Inorganic constituents for these samples were validated using U.S. Environmental Protection Agency (EPA) guidelines for data validation (EPA 2004) and the project work plan (ASARCO 2009). Samples were analyzed by Energy Laboratories, Inc. (ELI-Hel) in Helena, Montana, under work order H09110290.

Tables containing Validation Code Definitions (Table 1) and the Summary of Qualified Data (Table 2) are located in Appendix 1. The validated database is located in Appendix 2. Field notes, chain of custody forms, and laboratory reports are located in Appendices 3, 4, and 5, respectively.

Data quality objectives for this project are as follows:

- **Precision** is determined by field and laboratory duplicate sample results that are within control limits. The completeness objective for precision is 90% of the duplicate sample results within control limits. **This objective was met as 100% (33 out 33 results) of the field duplicate and 100% (37 out of 37 results) of the laboratory duplicate results were in control limits. The overall precision was calculated at 100% (70 out of 70 results).**
- **Accuracy** is determined by laboratory control sample (LCS) and matrix spike (MS) sample results that are within control limits. The completeness objective for accuracy is 90% of the LCS and MS sample results within control limits. **This objective was met as 100% (59 out of 59 results) of the LCS results and 98.4% (63 out of 64 results) of the MS results were within control limits. The overall accuracy was calculated at 99.2% (122 out of 123 results).**

  ***Note:** Due to the lack of LCSs for dissolved metals, fortified laboratory blanks were used to assess the accuracy for these analytes. In several cases, samples used for matrix spikes for were from unknown sources and therefore, could not be used to evaluate the accuracy of this sampling event's data. This is explained further in the following report.

- **Completeness** is calculated by the number of valid (not rejected) data per number of planned data, expressed as a percentage. The completeness goal for this project was 90%. **This goal was met as 100% (177 out of 177 results) of the planned data were analyzed and deemed valid.**

Qualified Data Summary

- Chloride was detected in the field blank and three results were flagged **"UJ"** to indicate the value is estimated and may be biased high.
- Dissolved copper was detected in the field blank and four results were flagged **"UJ"** to indicate the value is estimated and may be biased high.
- Sodium was detected in the field blank and two results were flagged **"UJ"** to indicate the value is estimated and may be biased high.
- Total Dissolved Solids (TDS) were detected in the field blank and four results were flagged **"UJ"** to indicate the value is estimated and may be biased high.
- Dissolved zinc was detected in the field blank and two results were flagged **"UJ"** to indicate the value is estimated and may be biased high.

Conclusion

The data collected in November 2009 for the ASARCO East Helena RCRA Consent Decree's monthly residential well monitoring program are deemed acceptable and can be used for the purposes they were intended, providing qualified data are used with caution. **Of the measured results, 91.5% (162 out of 177 results) can be used without qualification.**

Data Validation Report by: Linda L. Tangen

Client Review: Marc Weinreich, V.P.
Montana Environmental Trust Group

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to analyses for five groundwater and quality control samples collected on November 20, 2009 for the ASARCO East Helena RCRA Consent Decree's monthly residential well monitoring program (ASARCO 2009). Samples were analyzed by Energy Laboratories in Helena, Montana (ELI-Hel) under work order H09110290. One field blank and one field duplicate sample was included with these samples.

- Validation procedures used are generally consistent with:
  - _X_ EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganics Data Review (EPA 2004)
  - _X_ Work Plan – Interim Measures Work Plan Addendum (ASARCO 2002)
  - _X_ ASARCO East Helena Plant RCRA Consent Decree Monitoring Plan (ASARCO 2009)
  - ___ Other

- Overall level of validation:
  - ___ CLP
  - _X_ Standard – Field and laboratory quality control (QC) samples are reviewed; and samples associated with QC violations are flagged.
  - ___ Visual

2. DELIVERABLES

- All laboratory document deliverables were present and accurate as specified in the CLP-Statement of Work (EPA 2001), and/or the project contract.
  - _X_ Yes
  - ___ No

- All documentation of field procedures was provided as required.
  - _X_ Yes
  - ___ No

3. FIELD PROCEDURES

- Samples were collected from all project-required sites.
  - ___ Yes
  - _X_ No - see notes

  Notes: Samples were not collected at site 109 Gail because the well was shut down for the winter. This omission was not subtracted from the project's completeness.

- Field parameters were measured in accordance with the project work plan.
  _X_ Yes
  ____ No

- Field instruments were calibrated daily and before measurements were collected.
  _X_ Yes
  ____ No

- Chains of Custodies (COCs) were properly filled out and signed by the field personnel.
  _X_ Yes
  ____ No

- Data entry into field books, on COCs, and on sample labels were accurate and complete.
  _X_ Yes
  ____ No

4. FIELD BLANKS

Blanks: Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

Deionized water (DI), trip, rinsate, or any other field blanks have been carried out at the proper frequency (one rinsate blank and one DI blank per event).
_X_ Yes
____ No

Reported results on the field blanks were less than the Project Detection Limit Goals (PDLGs) or reporting limit.
____ Yes
_X_ No - see notes

Notes: Several field blank detections were greater than the PDLG. The results associated with these detections were flagged **"UJ"** to indicate value was estimated and may be biased high. The following table summarizes these detections.

Blank Type	Sample Code	Sample Date	Parameter	PDLG (mg/L)	Result (mg/L)	5 X Result (mg/L)	Flags
Field Blank	EHR-1109-304	11/20/09	Bicarbonate	1	2	10	0*
			Chloride	1	2	10	3
			Copper (Dis)	0.001	0.02	0.100	4
			Specific Conductivity (umhos/cm)	10	19	95	0*
			Sodium	5	3	15	2
			Total Dissolved Solids	10	109	545	4
			Total Alkalinity	1	1	5	0*
			Zinc (Dis)	0.02	0.07	0.35	2

***Note:** The associated results were either less than the detection limit or greater than five times the blank value.

5. FIELD DUPLICATES

Field duplicates have been collected at the proper frequency (one field duplicate per event).

_X_ Yes
___ No

Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 20% or less). If the sample or duplicate result is less or equal to five times the PDLG, the RPD criteria are not used. In these cases, the difference between the sample and the duplicate results must be within ± the PDLG.

_X_ Yes
___ No

6. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - _X_ CLP-Statement of Work (EPA 2001)
  - ___ SW-846 (EPA 1986)
  - _X_ Methods for Chemical Analysis of Water and Wastes (EPA 1983)

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Consistency with project requirements**

  Analyses were carried out as required by the project work plan (ASARCO 2009).

  _X_ Yes
  ___ No

  Project specified methods were used.

  _X_ Yes
  ___ No

7. DETECTION LIMITS

- Reporting detection limits met PDLGs.
  - _X_ Yes
  - ___ No

8. LABORATORY BLANKS

Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

- Method blanks were prepared and analyzed at the required frequency (one per batch or one per 20 samples, whichever is greater.

  _X_ Yes
  ____ No

- All the analytes in the blank were less than the PDLG.

  _X_ Yes
  ____ No

9. LABORATORY MATRIX SPIKES

- A Matrix Spike (MS) sample (pre-digestion) was analyzed at the proper frequency (one per batch and/or matrix).

  ____ Yes
  _X_ No – see notes

  Notes: The manganese concentration was greater than four times the spike concentration for an MS samples analyzed for analytical batch R58375. Therefore, inter-parameter interferences could not be evaluated for manganese. Accuracy for this analyte was measured using LCS recoveries. Results are not qualified for this frequency deficiency.

- MS recoveries were within the required control limits (75-125%).

  ____ Yes
  _X_ No – see notes

  Notes: Samples are not normally qualified due to matrix spike results alone. Professional judgment is used to determine whether the MS recovery exceedance is associated with the MS sample, the sample used for the matrix spike, or with the entire analytical batch. One matrix spike recovery was out of control limits. However, it was determined that the low recovery was associated with the MS sample only and results were not qualified. The following table summarizes the MS QC exceedance.

MS Sample Code	Sample Batch	Analysis Batch	Analysis Date	Parameter	% Recovery	# of Flags
H09110290-003BMSD2	H09110290	R58415	11/23/09	Calcium	67	0*

*Notes: The associated MS recovery was within control limits.

10. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per batch or one per 20 samples, whichever is greater).

  _X_ Yes
  ____ No

- RPDs were within the required control limits (RPD of 20% or less). If the sample or duplicate result is less or equal to five times the PDLG, the RPD criteria are not used. In these cases, the difference between the sample and the duplicate results must be within ± the PDLG.

  _X_ Yes
  ___ No

11. LABORATORY CONTROL STANDARDS (LCS)

Laboratory Fortified Blanks (LFBs) were used in lieu of LCS' for metal analyses. This is acceptable for the purpose of the project.

- The reference material used for the LCS or LFB was of the correct matrix.

  _X_ Yes
  ___ No

- LCS' or LFBs were prepared and analyzed at the proper frequency (one per batch or one per 20 samples, whichever is greater).

  _X_ Yes
  ___ No

- LCS recoveries were within the required control limits (80-120% or certified range).

  _X_ Yes
  ___ No

12. INTERPARAMETER COMPARISON

_X_ Lab pH vs. Field pH.

_X_ Lab Specific Conductivity (SC) vs. Field SC

_X_ Total Dissolved Solids (TDS) vs. Lab SC

Notes: *RPDs were used to compare associated measurements. If the RPD was greater than 20, the measurements were then compared to other analytes and/or historical data to determine if they were valid or anomalies. Following is a summary of these comparisons.*

Lab pH vs. Field pH: All field and lab pH comparisons were in order (pairs had RPDs less than 20). The RPDs for pH pairs ranged from 6.7% to 9.8%, with an average RPD of 8.3%.

Lab SC vs. Field SC: All field and lab SC comparisons were in order (pairs had RPDs less than 20). The RPDs for SC pairs ranged from 13.5% to 15.2%, with an average RPD of 14.2%.

TDS vs. Lab SC: The ratio of TDS to lab SC should lie between 0.55 and 0.75. In natural waters with high sulfate, the ratio may be much higher. This ratio is intended to be a check on the accuracy of the TDS and lab SC measurements. (It should be noted that these measurements are less accurate in dilute waters.) For this sampling event, the ratios were in line with historical data. The TDS/SC ratios ranged from 0.59 to 0.70, with an average ratio of 0.65.

13. HISTORICAL COMPARISON SUMMARY

Data for this sampling event were compared with the previous five years of sampling events. All of this sampling event's results were less than three standard deviations from the historical mean.

14. DATA QUALITY OBJECTIVES (DQOS)

- The data quality goal was met for precision (90% of the field and laboratory duplicates were within control limits).

  _X_ Yes –see the following table

  ____ No

Precision Objectives

QC Type	Total Results	# of Results Out of Control Limits	# of Results Within Control Limits	% Within Control Limits
Field Duplicates	33	0	33	100%
Lab Duplicates	37	0	37	100%
Overall	**70**	**0**	**70**	**100%**

- The data quality goal was met for accuracy (90% of the LCS and matrix spike results were within control limits).

  _X_ Yes – see the following table

  ____ No

Accuracy Objectives

QC Type	Total Results	# of Results Out of Control Limits	# of Results Within Control Limits	% Within Control Limits
LCS' and LFBs	59	0	59	100%
Matrix Spikes	64	1	63	98.4%
Overall	**123**	**1**	**122**	**99.2%**

- DQO target for completeness was met (the number of valid results divided by the number of possible results is 90% or above).
  _X_ Yes – see the following table
  ____ No

Completeness

# of Planned Measurements	Actual # of Measurements	# of Rejected Measurements	# of Valid Measurements	Completeness
177	177	0	177	100%

- Samples were qualified for QC exceedances and deficiencies.
  _X_ Yes – see the following table
  ____ No

Qualification of Samples

# of Measurements	# of Qualified Measurements	# Not Qualified	% Not Qualified
177	15	162	91.5%

15. CONCLUSION

The data collected in November 2009 for the ASARCO East Helena RCRA Consent Decree's monthly residential well monitoring program are deemed acceptable and can be used for the purposes they were intended, providing qualified data are used with caution.

REFERENCES

ASARCO 2009. *ASARCO East Helena Plant RCRA Consent Decree Monitoring Plan.* ASARCO LLC. March.

EPA 1983. *Methods for Chemical Analysis of Water and Wastes.* United States Environmental Protection Agency. March.

EPA 1986. *Test Method for Evaluating Solid Waste: Physical/Chemical Methods 3rd Ed. 4 Vols.* United States Environmental Protection Agency. November.

EPA 2001. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis.* United States Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.* United States Environmental Protection Agency. Document Number OSWER 9240.1-45. EPA 540-R-04-004. October.

APPENDIX 1

TABLES

Table 1. Data Validation Codes and Definitions

ASARCO East Helena Private Well Monitoring

November 2009

Qualifier	Description
UJ	The associated detection limit value is estimated.

Table 2. Summary of Qualified Data
ASARCO East Helena Private Well Monitoring
November 2009

Station Name / Field Sample ID / Parameter	Samp Date	Value	Unit	Flag	QC Type-Exceedance*
203 Gail					
EHR-1109-300	**11/20/2009**				
Chloride (Cl)		4	mg/L	UJ	Field Blank - Result (2 mg/L) > PDLG
Copper (Cu) DIS		0.015	mg/L	UJ	Field Blank - Result (0.02 mg/L) > PDLG
Sodium (Na) DIS		13	mg/L	UJ	Field Blank - Result (3 mg/L) > PDLG
TDS (Measured at 180 C)		168	mg/L	UJ	Field Blank - Result (109 mg/L) > PDLG
EHR-1109-301	**11/20/2009**				
Chloride (Cl)		4	mg/L	UJ	Field Blank - Result (2 mg/L) > PDLG
Copper (Cu) DIS		0.016	mg/L	UJ	Field Blank - Result (0.02 mg/L) > PDLG
Sodium (Na) DIS		13	mg/L	UJ	Field Blank - Result (3 mg/L) > PDLG
TDS (Measured at 180 C)		169	mg/L	UJ	Field Blank - Result (109 mg/L) > PDLG
2540 Wylie Dr					
EHR-1109-302	**11/20/2009**				
Chloride (Cl)		7	mg/L	UJ	Field Blank - Result (2 mg/L) > PDLG
Copper (Cu) DIS		0.002	mg/L	UJ	Field Blank - Result (0.02 mg/L) > PDLG
TDS (Measured at 180 C)		312	mg/L	UJ	Field Blank - Result (109 mg/L) > PDLG
Zinc (Zn) DIS		0.02	mg/L	UJ	Field Blank - Result (0.07 mg/L) > PDLG
401 Gail					
EHR-1109-303	**11/20/2009**				
Copper (Cu) DIS		0.006	mg/L	UJ	Field Blank - Result (0.02 mg/L) > PDLG
TDS (Measured at 180 C)		534	mg/L	UJ	Field Blank - Result (109 mg/L) > PDLG
Zinc (Zn) DIS		0.05	mg/L	UJ	Field Blank - Result (0.07 mg/L) > PDLG

***Notes: PDLG = Project Detection Limit Goal; Diff = Difference.**

APPENDIX 2

DATABASE

ANALYSES SUMMARY REPORT

ASARCO East Helena Private Well Monitoring - November 2009

Database: ASARCO, East Helena Plant

Table of Contents by Station Type

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

Run Time: 1/14/2010 2:08:37 PM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

ANALYSES SUMMARY REPORT

ASARCO East Helena Private Well Monitoring - November 2009

Database: ASARCO, East Helena Plant

Table of Contents By Lab Sample ID

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

Run Time: 1/14/2010 2:08:37 PM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

ANALYSES SUMMARY REPORT

ASARCO East Helena Private Well Monitoring - November 2009

Database: ASARCO, East Helena Plant

Table of Contents by Sample ID

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

Run Time: 1/14/2010 2:08:37 PM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

ANALYSES SUMMARY REPORT

ASARCO East Helena Private Well Monitoring - November 2009

Database: ASARCO, East Helena Plant

Sample Matrix	STATION	203Gail	203Gail	2540 Wylie	401Gail
Water	SAMPLE DATE	11/20/2009	11/20/2009	11/20/2009	11/20/2009
	SAMPLE TIME	09:30	09:45	10:10	11:00
	LAB	ELI	ELI	ELI	ELI
	LAB NUMBER	H09110290-001	H09110290-002	H09110290-003	H09110290-004
	SAMPLE NUMBER	EHR-1109-300	EHR-1109-301	EHR-1109-302	EHR-1109-303
	TYPE	Domestic Wells	Domestic Wells	Domestic Wells	Domestic Wells
	GROUP	Private Wells	Private Wells	Private Wells	Private Wells
	DESCRIPTION				
	REMARKS		Field Duplicate		
Common Ions (mg/L): ppm unless noted					
	Bicarbonate (HCO3)	93	93	140	140
	Calcium (Ca) (DIS)	29	29	56	95
	Chloride (Cl)	4 UJ	4 UJ	7 UJ	27
	Magnesium (Mg) (DIS)	6	6	12	22
	Potassium (K) (DIS)	2	3	5	6
	Sodium (Na) (DIS)	13 UJ	13 UJ	16	25
	Sulfate (SO4)	52	52	110	230
	Total Alkalinity As CACO3	77	76	110	120
Metals (mg/L): ppm unless noted					
	Aluminum (Al) (DIS)	<0.1	<0.1	<0.1	<0.1
	Antimony (Sb) (DIS)	<0.003	<0.003	<0.003	<0.003
	Arsenic (As) (DIS)	<0.002	<0.002	<0.002	<0.002
	Barium (Ba) (DIS)	<0.1	<0.1	<0.1	<0.1
	Beryllium (Be) (DIS)	<0.001	<0.001	<0.001	<0.001
	Cadmium (Cd) (DIS)	<0.001	<0.001	<0.001	<0.001
	Chromium (Cr) (DIS)	<0.001	<0.001	<0.001	<0.001
	Cobalt (Co) (DIS)	<0.01	<0.01	<0.01	<0.01
	Copper (Cu) (DIS)	0.015 UJ	0.016 UJ	0.002 UJ	0.006 UJ
	Gold (Au) (DIS)	<0.01	<0.01	<0.01	<0.01
	Iron (Fe) (DIS)	<0.02	<0.02	<0.02	0.15
	Lead (Pb) (DIS)	<0.005	<0.005	<0.005	<0.005
	Manganese (Mn) (DIS)	<0.01	<0.01	<0.01	0.03
	Mercury (Hg) (DIS)	<0.001	<0.001	<0.001	<0.001
	Nickel (Ni) (DIS)	<0.01	<0.01	<0.01	<0.01
	Selenium (Se) (DIS)	<0.001	<0.001	0.003	0.018
	Silver (Ag) (DIS)	<0.005	<0.005	<0.005	<0.005
	Tellurium (Te) (DIS)	<0.1	<0.1	<0.1	<0.1
	Thallium (Tl) (DIS)	<0.001	<0.001	<0.001	<0.001
	Vanadium (V) (DIS)	<0.01	<0.01	<0.01	<0.01
	Zinc (Zn) (DIS)	<0.01	<0.01	0.02 UJ	0.05 UJ
Physical/Fld-Lab: ppm unless noted					
	Oxygen (O) (DIS) (Fld)	7.12		7.78	5.41
	pH	7.3	7.3	7.3	7.2
	pH (Fld)	6.62		6.83	6.62
	SC (umhos/cm at 25 C) (Fld)	243		414	662
	SC (umhos/cm at 25 C)	283	284	475	758

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

NOTE: Table 1 lists data validation flagging descriptions.

Run Time: 1/14/2010 2:08:37 PM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

ANALYSES SUMMARY REPORT

ASARCO East Helena Private Well Monitoring - November 2009

Database: ASARCO, East Helena Plant

Sample Matrix	STATION	203Gail	203Gail	2540 Wylie	401Gail
Water	SAMPLE DATE	11/20/2009	11/20/2009	11/20/2009	11/20/2009
	SAMPLE TIME	09:30	09:45	10:10	11:00
	LAB	ELI	ELI	ELI	ELI
	LAB NUMBER	H09110290-001	H09110290-002	H09110290-003	H09110290-004
	SAMPLE NUMBER	EHR-1109-300	EHR-1109-301	EHR-1109-302	EHR-1109-303
	TYPE	Domestic Wells	Domestic Wells	Domestic Wells	Domestic Wells
	GROUP	Private Wells	Private Wells	Private Wells	Private Wells
	DESCRIPTION				
	REMARKS		Field Duplicate		
Physical/Fld-Lab: ppm unless noted					
	Total Suspended Solids	<10	<10	<10	<10
	TDS (Measured at 180 C)	168 UJ	169 UJ	312 UJ	534 UJ
	Water Temperature (C) (Fld)	10.5		9.5	11.7

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

NOTE: Table 1 lists data validation flagging descriptions.

ANALYSES SUMMARY REPORT

ASARCO East Helena Private Well Monitoring - November 2009

Database: ASARCO, East Helena Plant

Sample Matrix		
Water	STATION	FieldBlank
	SAMPLE DATE	11/20/2009
	SAMPLE TIME	1130
	LAB	ELI
	LAB NUMBER	H09110290-005
	SAMPLE NUMBER	EHR-1109-304
	TYPE	Field QC
	GROUP	Private Wells
	DESCRIPTION	
	REMARKS	Blank
Common Ions (mg/L): ppm unless noted		
	Bicarbonate (HCO3)	2
	Calcium (Ca) (DIS)	<1
	Chloride (Cl)	2
	Magnesium (Mg) (DIS)	<1
	Potassium (K) (DIS)	<1
	Sodium (Na) (DIS)	3
	Sulfate (SO4)	<1
	Total Alkalinity As CACO3	1
Metals (mg/L): ppm unless noted		
	Aluminum (Al) (DIS)	<0.1
	Antimony (Sb) (DIS)	<0.003
	Arsenic (As) (DIS)	<0.002
	Barium (Ba) (DIS)	<0.1
	Beryllium (Be) (DIS)	<0.001
	Cadmium (Cd) (DIS)	<0.001
	Chromium (Cr) (DIS)	<0.001
	Cobalt (Co) (DIS)	<0.01
	Copper (Cu) (DIS)	0.02
	Gold (Au) (DIS)	<0.01
	Iron (Fe) (DIS)	<0.02
	Lead (Pb) (DIS)	<0.005
	Manganese (Mn) (DIS)	<0.01
	Mercury (Hg) (DIS)	<0.001
	Nickel (Ni) (DIS)	<0.01
	Selenium (Se) (DIS)	<0.001
	Silver (Ag) (DIS)	<0.005
	Tellurium (Te) (DIS)	<0.1
	Thallium (Tl) (DIS)	<0.001
	Vanadium (V) (DIS)	<0.01
	Zinc (Zn) (DIS)	0.07
Physical/Fld-Lab: ppm unless noted		
	pH	6.5
	SC (umhos/cm at 25 C)	19
	Total Suspended Solids	<10
	TDS (Measured at 180 C)	109

TOT: Total; DIS: Dissolved; TRC: Total Recoverable

NOTE: Table 1 lists data validation flagging descriptions.

Run Time: 1/14/2010 2:08:37 PM

C:\EnviroDataDB\Databases\V5_B_DB\EastHelena.mdb

APPENDIX 3

FIELD NOTES

NOVEMBER 20, 2009
MONTHLY LONG-TERM RI/FS MONITORING
RESIDENTIAL WELLS

FIELD STANDARDIZATION OF HORIBA

	STANDARD VALUE	METER READING
ph	4.00 SU	4.00 SU
CONDUCTIVITY	4480 umhos/cm	4480 umhos/cm
SALINITY	0.23%	0.23%

[FOLEY]
203 GAIL STREET
EHR-1109-300 ORIGINAL
EHR-1109-301 DUPLICATE
HOUSE IS VACANT.

ph	6.62 SU
CONDUCTIVITY	2.43 umhos/cm
D.O.	7.12 mg/L
TEMP	10.5°C

[SIMAC]
2540 Wylie Drive
IRRIGATION SYSTEM WINTERIZED, NO
Sample collected
DRINKING WATER:
EHR-1109-302

ph	6.83 SU
CONDUCTIVITY	414 umhos/cm
D.O.	7.78 mg/L
TEMP	9.5°C

[JENSEN]
401 GAIL STREET
EHR-1109-303
SAMPLE COLLECTED FROM GARDEN SPIGOT

ph	6.62 SU
CONDUCTIVITY	6.62 umhos/cm
D.O.	5.41 mg/L
TEMP	11.7°C

[NORDSTROM]
IRRIGATION SYSTEM WINTERIZED,
NO SAMPLE COLLECTED

FIELD BLANK
EHR-1109-304

APPENDIX 4

CHAIN OF CUSTODIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT- Provide as much information as possible.

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
ASARCO LLC	LONG TERM RI/FS RESIDENTIAL WELLS - NOVEMBER 2009	State: MT	Yes ☐ No ☐
Report Mail Address: P.O. BOX 1230 EAST HELENA, MT 59635	**Contact Name:** **Phone/Fax:**	**Email:**	**Sampler: (Please Print)** NICKEL
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ A2LA
☐ GSA ☐ EDD/EDT (Electronic Data) Format: _____
☐ POTW/WWTP ☐ LEVEL IV
☐ State: _____ ☐ NELAC
☐ Other: _____

Number of Containers
Sample Type: A Air W Water S Soils/Solids V Vegetation B Bioassay O Other

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Physical Parameters	Common Ions	Metals	SEE ATTACHED	Normal Turnaround (TAT)
1 EHR-1109-300 RAW	11/20/2009	9:30	GW	X	X		X	X
2 EHR-1109-300 METAL		9:30				X		
3 EHR-1109-301 RAW		9:45		X	X			
4 EHR-1109-301 METAL		9:45				X		
5 EHR-1109-302 RAW		10:10		X	X			
6 EHR-1109-302 METAL		10:10				X		
7 EHR-1109-303 RAW		11:00		X	X			
EHR-1109-303 METAL		11:00				X		
9 EHR-1109-304 RAW		11:30		X	X			
10 EHR-1109-304 METAL		11:30				X		

RUSH

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand

Cooler ID(s):

Receipt Temp 6.5 °C

On Ice: Yes (NO)

Custody Seal Y (N)

Bottles/Coolers B C

Intact Y N

Signature Match Y N

LABORATORY USE ONLY H09110290

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Jon Nickel	11/20/09 1236				
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory: LeAnne Jubbs	Date/Time: 11.20.09 12:36	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

APPENDIX 5

LABORATORY REPORT

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

ANALYTICAL SUMMARY REPORT

December 10, 2009

Asarco LLC
PO Box 1230
East Helena, MT 59635

Workorder No.: H09110290 Quote ID: H409 - Semi-Annual Residential CAMU Monitoring

Project Name: Residential Wells-Long Term RI/RS-November 2009

Energy Laboratories Inc received the following 5 samples for Asarco LLC on 11/20/2009 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H09110290-001	EHR-1109-300	11/20/09 9:30	11/20/09	Aqueous	Metals by ICP/ICPMS, Dissolved Alkalinity Conductivity Anions by Ion Chromatography pH Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H09110290-002	EHR-1109-301	11/20/09 9:45	11/20/09	Aqueous	Same As Above
H09110290-003	EHR-1109-302	11/20/09 10:10	11/20/09	Aqueous	Same As Above
H09110290-004	EHR-1109-303	11/20/09 11:00	11/20/09	Aqueous	Same As Above
H09110290-005	EHR-1109-304	11/20/09 11:30	11/20/09	Aqueous	Same As Above

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT, EPA # MT00005
eli-c - Energy Laboratories, Inc. - Casper, WY, EPA# WY00002
eli-g - Energy Laboratories, Inc. - Gillette, WY, EPA# WY00006
eli-h - Energy Laboratories, Inc. - Helena, MT, EPA# MT00945
eli-r - Energy Laboratories, Inc. - Rapid City, SD, EPA# SD00012
eli-t - Energy Laboratories, Inc. - College Station, TX, EPA# TX01520

SUBCONTRACTING ANALYSIS
Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES, INC. will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories are indicated within the Laboratory Analytical Report.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

ELI appreciates the opportunity to provide you with this analytical service. For additional information, including certifications, and analytical services visit our web page www.energylab.com.

Report Approved By: Jonathan D. Hager

Digitally signed by Jonathan D. Hager
DN: cn=Jonathan D. Hager, o=Energy Laboratory-Helena, ou=Assistant Lab Manager, email=jhager@energylab.com, c=US
Date: 2009.12.11 13:12:49 -07'00'

ENERGY LABORATORIES, INC. • P.O. Box 5688 • 3161 East Lyndale Ave. • Helena, MT 59604
877-472-0711 • 406-442-0711 • 406-442-0712 fax • helena@energylab.com

Energy Laboratories Inc
Workorder Receipt Checklist

H09110290

Asarco LLC

Login completed by: Tracy L. Lorash
Date and Time Received: 11/20/2009 12:36 PM
Reviewed by: BL2000\ablackburn
Received by: rlt
Reviewed Date: 11/24/2009 11:48:25 AM
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	6.5°C From Field		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

None

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-300
Lab ID: H09110290-001
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 09:30 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	11/20/09 17:34 / hm		PH2_091120A	20	091120A-PH-W
Conductivity	283	umhos/cm		1		A2510 B	11/20/09 17:31 / hm		COND_091120A	3291	120A-COND-PROB
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	11/23/09 14:03 / JG	11/23/09 13:45	124 (14410200)_091123A	29	7458
Solids, Total Dissolved TDS @ 180 C	168	mg/L		10		A2540 C	11/23/09 14:19 / JG	11/23/09 13:43	124 (14410200)_091123B	28	7456
INORGANICS											
Alkalinity, Total as CaCO3	77	mg/L		1		A2320 B	11/23/09 20:17 / hm		MAN-TECH_091123A	64	R58398
Bicarbonate as HCO3	93	mg/L		1		A2320 B	11/23/09 20:17 / hm		MAN-TECH_091123A	64	R58398
Chloride	4	mg/L		1		E300.0	11/23/09 14:05 / hm		IC101-H_091120A	260	R58411
Sulfate	52	mg/L		1		E300.0	11/23/09 14:05 / hm		IC101-H_091120A	260	R58411
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Antimony	ND	mg/L		0.003		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Arsenic	ND	mg/L		0.002		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Barium	ND	mg/L		0.1		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Beryllium	ND	mg/L		0.001		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Cadmium	ND	mg/L		0.001		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Calcium	29	mg/L		1		E200.7	11/23/09 16:33 / sld		ICP1-HE_091123A	134	R58415
Chromium	ND	mg/L		0.001		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Cobalt	ND	mg/L		0.01		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Copper	0.015	mg/L		0.001		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Gold	ND	mg/L		0.01		E200.7	11/23/09 16:33 / sld		ICP1-HE_091123A	134	R58415
Iron	ND	mg/L		0.02		E200.7	11/23/09 16:33 / sld		ICP1-HE_091123A	134	R58415
Lead	ND	mg/L		0.005		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Magnesium	6	mg/L		1		E200.7	11/23/09 16:33 / sld		ICP1-HE_091123A	134	R58415
Manganese	ND	mg/L		0.01		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Mercury	ND	mg/L		0.001		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Nickel	ND	mg/L		0.01		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Potassium	2	mg/L		1		E200.7	11/23/09 16:33 / sld		ICP1-HE_091123A	134	R58415
Selenium	ND	mg/L		0.001		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Silver	ND	mg/L		0.005		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-300
Lab ID: H09110290-001
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 09:30 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	13	mg/L		1		E200.7	11/24/09 16:20 / sld		ICP1-HE_091124B	51	R58468
Tellurium	ND	mg/L		0.1		E200.7	11/23/09 16:33 / sld		ICP1-HE_091123A	134	R58415
Thallium	ND	mg/L		0.001		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Vanadium	ND	mg/L		0.01		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375
Zinc	ND	mg/L		0.01		E200.8	11/23/09 16:41 / dck		ICPMS204-B_091123A	62	R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-301
Lab ID: H09110290-002
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 09:45 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	11/20/09 17:37 / hm		PH2_091120A	21	091120A-PH-W
Conductivity	284	umhos/cm		1		A2510 B	11/20/09 17:33 / hm		COND_091120A	3391	120A-COND-PROB
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	11/23/09 14:03 / JG	11/23/09 13:45	124 (14410200)_091123A	30	7458
Solids, Total Dissolved TDS @ 180 C	169	mg/L		10		A2540 C	11/23/09 14:20 / JG	11/23/09 13:43	124 (14410200)_091123B	29	7456
INORGANICS											
Alkalinity, Total as CaCO3	76	mg/L		1		A2320 B	11/23/09 20:23 / hm		MAN-TECH_091123A	65	R58398
Bicarbonate as HCO3	93	mg/L		1		A2320 B	11/23/09 20:23 / hm		MAN-TECH_091123A	65	R58398
Chloride	4	mg/L		1		E300.0	11/23/09 14:22 / hm		IC101-H_091120A	261	R58411
Sulfate	52	mg/L		1		E300.0	11/23/09 14:22 / hm		IC101-H_091120A	261	R58411
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Antimony	ND	mg/L		0.003		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Arsenic	ND	mg/L		0.002		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Barium	ND	mg/L		0.1		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Beryllium	ND	mg/L		0.001		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Cadmium	ND	mg/L		0.001		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Calcium	29	mg/L		1		E200.7	11/23/09 16:36 / sld		ICP1-HE_091123A	135	R58415
Chromium	ND	mg/L		0.001		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Cobalt	ND	mg/L		0.01		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Copper	0.016	mg/L		0.001		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Gold	ND	mg/L		0.01		E200.7	11/23/09 16:36 / sld		ICP1-HE_091123A	135	R58415
Iron	ND	mg/L		0.02		E200.7	11/23/09 16:36 / sld		ICP1-HE_091123A	135	R58415
Lead	ND	mg/L		0.005		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Magnesium	6	mg/L		1		E200.7	11/23/09 16:36 / sld		ICP1-HE_091123A	135	R58415
Manganese	ND	mg/L		0.01		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Mercury	ND	mg/L		0.001		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Nickel	ND	mg/L		0.01		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375
Potassium	3	mg/L		1		E200.7	11/23/09 16:36 / sld		ICP1-HE_091123A	135	R58415
Selenium	ND	mg/L		0.001		E200.8	11/24/09 13:08 / dck		ICPMS204-B_091124A	24	R58505
Silver	ND	mg/L		0.005		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A	63	R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-301
Lab ID: H09110290-002
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 09:45 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	13	mg/L		1		E200.7	11/24/09 16:23 / sld		ICP1-HE_091124B : 52		R58468
Tellurium	ND	mg/L		0.1		E200.7	11/23/09 16:36 / sld		ICP1-HE_091123A : 135		R58415
Thallium	ND	mg/L		0.001		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A : 63		R58375
Vanadium	ND	mg/L		0.01		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A : 63		R58375
Zinc	ND	mg/L		0.01		E200.8	11/23/09 16:46 / dck		ICPMS204-B_091123A : 63		R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-302
Lab ID: H09110290-003
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 10:10 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	11/20/09 17:38 / hm		PH2_091120A	22	091120A-PH-W
Conductivity	475	umhos/cm		1		A2510 B	11/20/09 17:34 / hm		COND_091120A	34	91120A-COND-PROB
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	11/23/09 14:04 / JG	11/23/09 13:45	124 (14410200)_091123A	31	7458
Solids, Total Dissolved TDS @ 180 C	312	mg/L		10		A2540 C	11/23/09 14:20 / JG	11/23/09 13:43	124 (14410200)_091123B	30	7456
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		1		A2320 B	11/23/09 20:44 / hm		MAN-TECH_091123A	68	R58398
Bicarbonate as HCO3	140	mg/L		1		A2320 B	11/23/09 20:44 / hm		MAN-TECH_091123A	68	R58398
Chloride	7	mg/L		1		E300.0	11/23/09 15:11 / hm		IC101-H_091120A	264	R58411
Sulfate	110	mg/L		1		E300.0	11/23/09 15:11 / hm		IC101-H_091120A	264	R58411
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Antimony	ND	mg/L		0.003		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Arsenic	ND	mg/L		0.002		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Barium	ND	mg/L		0.1		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Beryllium	ND	mg/L		0.001		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Cadmium	ND	mg/L		0.001		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Calcium	56	mg/L		1		E200.7	11/23/09 16:40 / sld		ICP1-HE_091123A	136	R58415
Chromium	ND	mg/L		0.001		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Cobalt	ND	mg/L		0.01		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Copper	0.002	mg/L		0.001		E200.8	11/24/09 13:29 / dck		ICPMS204-B_091124A	28	R58505
Gold	ND	mg/L		0.01		E200.7	11/23/09 16:40 / sld		ICP1-HE_091123A	136	R58415
Iron	ND	mg/L		0.02		E200.7	11/23/09 16:40 / sld		ICP1-HE_091123A	136	R58415
Lead	ND	mg/L		0.005		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Magnesium	12	mg/L		1		E200.7	11/23/09 16:40 / sld		ICP1-HE_091123A	136	R58415
Manganese	ND	mg/L		0.01		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Mercury	ND	mg/L		0.001		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Nickel	ND	mg/L		0.01		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Potassium	5	mg/L		1		E200.7	11/23/09 16:40 / sld		ICP1-HE_091123A	136	R58415
Selenium	0.003	mg/L		0.001		E200.8	11/24/09 13:29 / dck		ICPMS204-B_091124A	28	R58505
Silver	ND	mg/L		0.005		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375

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ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-302
Lab ID: H09110290-003
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 10:10 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	16	mg/L		1		E200.7	11/24/09 16:26 / sld		ICP1-HE_091124B	53	R58468
Tellurium	ND	mg/L		0.1		E200.7	11/23/09 16:40 / sld		ICP1-HE_091123A	136	R58415
Thallium	ND	mg/L		0.001		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Vanadium	ND	mg/L		0.01		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375
Zinc	0.02	mg/L		0.01		E200.8	11/23/09 16:51 / dck		ICPMS204-B_091123A	64	R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-303
Lab ID: H09110290-004
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 11:00 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.		0.1		A4500-H B	11/20/09 17:39 / hm		PH2_091120A	23	091120A-PH-W
Conductivity	758	umhos/cm		1		A2510 B	11/20/09 17:35 / hm		COND_091120A	35	91120A-COND-PROB
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	11/23/09 14:05 / JG	11/23/09 13:45	124 (14410200)_091123A	33	7458
Solids, Total Dissolved TDS @ 180 C	534	mg/L		10		A2540 C	11/23/09 14:22 / JG	11/23/09 13:43	124 (14410200)_091123B	33	7456
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		1		A2320 B	11/23/09 20:50 / hm		MAN-TECH_091123A	69	R58398
Bicarbonate as HCO3	140	mg/L		1		A2320 B	11/23/09 20:50 / hm		MAN-TECH_091123A	69	R58398
Chloride	27	mg/L		1		E300.0	11/23/09 15:27 / hm		IC101-H_091120A	265	R58411
Sulfate	230	mg/L		1		E300.0	11/23/09 15:27 / hm		IC101-H_091120A	265	R58411
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Antimony	ND	mg/L		0.003		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Arsenic	ND	mg/L		0.002		E200.8	11/24/09 13:34 / dck		ICPMS204-B_091124A	29	R58505
Barium	ND	mg/L		0.1		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Beryllium	ND	mg/L		0.001		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Cadmium	ND	mg/L		0.001		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Calcium	95	mg/L		1		E200.7	11/23/09 16:55 / sld		ICP1-HE_091123A	141	R58415
Chromium	ND	mg/L		0.001		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Cobalt	ND	mg/L		0.01		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Copper	0.006	mg/L		0.001		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Gold	ND	mg/L		0.01		E200.7	11/23/09 16:55 / sld		ICP1-HE_091123A	141	R58415
Iron	0.15	mg/L		0.02		E200.7	11/23/09 16:55 / sld		ICP1-HE_091123A	141	R58415
Lead	ND	mg/L		0.005		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Magnesium	22	mg/L		1		E200.7	11/23/09 16:55 / sld		ICP1-HE_091123A	141	R58415
Manganese	0.03	mg/L		0.01		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Mercury	ND	mg/L		0.001		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Nickel	ND	mg/L		0.01		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Potassium	6	mg/L		1		E200.7	11/23/09 16:55 / sld		ICP1-HE_091123A	141	R58415
Selenium	0.018	mg/L		0.001		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Silver	ND	mg/L		0.005		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-303
Lab ID: H09110290-004
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 11:00 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	25	mg/L		1		E200.7	11/25/09 10:13 / sld		ICP1-HE_091125A	22	R58469
Tellurium	ND	mg/L		0.1		E200.7	11/23/09 16:55 / sld		ICP1-HE_091123A	141	R58415
Thallium	ND	mg/L		0.001		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Vanadium	ND	mg/L		0.01		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375
Zinc	0.05	mg/L		0.01		E200.8	11/23/09 16:56 / dck		ICPMS204-B_091123A	65	R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-304
Lab ID: H09110290-005
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 11:30 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	6.5	s.u.		0.1		A4500-H B	11/20/09 17:41 / hm		PH2_091120A	24	091120A-PH-W
Conductivity	19	umhos/cm		1		A2510 B	11/20/09 17:36 / hm		COND_091120A	36	91120A-COND-PROB
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	11/23/09 14:05 / JG	11/23/09 13:45	124 (14410200)_091123A	34	7458
Solids, Total Dissolved TDS @ 180 C	109	mg/L		10		A2540 C	11/25/09 15:08 / hm	11/25/09 13:17	I-124 (14410200)_091125A	3	7479
INORGANICS											
Alkalinity, Total as CaCO3	1	mg/L		1		A2320 B	11/23/09 20:55 / hm		MAN-TECH_091123A	70	R58398
Bicarbonate as HCO3	2	mg/L		1		A2320 B	11/23/09 20:55 / hm		MAN-TECH_091123A	70	R58398
Chloride	2	mg/L		1		E300.0	11/23/09 15:44 / hm		IC101-H_091120A	266	R58411
Sulfate	ND	mg/L		1		E300.0	11/23/09 15:44 / hm		IC101-H_091120A	266	R58411
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.1		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Antimony	ND	mg/L		0.003		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Arsenic	ND	mg/L		0.002		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Barium	ND	mg/L		0.1		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Beryllium	ND	mg/L		0.001		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Cadmium	ND	mg/L		0.001		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Calcium	ND	mg/L		1		E200.7	11/23/09 16:58 / sld		ICP1-HE_091123A	142	R58415
Chromium	ND	mg/L		0.001		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Cobalt	ND	mg/L		0.01		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Copper	0.020	mg/L		0.001		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Gold	ND	mg/L		0.01		E200.7	11/23/09 16:58 / sld		ICP1-HE_091123A	142	R58415
Iron	ND	mg/L		0.02		E200.7	11/23/09 16:58 / sld		ICP1-HE_091123A	142	R58415
Lead	ND	mg/L		0.005		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Magnesium	ND	mg/L		1		E200.7	11/23/09 16:58 / sld		ICP1-HE_091123A	142	R58415
Manganese	ND	mg/L		0.01		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Mercury	ND	mg/L		0.001		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Nickel	ND	mg/L		0.01		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Potassium	ND	mg/L		1		E200.7	11/23/09 16:58 / sld		ICP1-HE_091123A	142	R58415
Selenium	ND	mg/L		0.001		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Silver	ND	mg/L		0.005		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Asarco LLC
Client Sample ID: EHR-1109-304
Lab ID: H09110290-005
Matrix: Aqueous

Project: Residential Wells-Long Term RI/RS-November 2009
Collection Date: 11/20/09 11:30 **DateReceived:** 11/20/09
Report Date: 12/10/09

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, DISSOLVED											
Sodium	3	mg/L		1		E200.7	11/25/09 10:22 / sld		ICP1-HE_091125A	25	R58469
Tellurium	ND	mg/L		0.1		E200.7	11/23/09 16:58 / sld		ICP1-HE_091123A	142	R58415
Thallium	ND	mg/L		0.001		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Vanadium	ND	mg/L		0.01		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375
Zinc	0.07	mg/L		0.01		E200.8	11/23/09 17:01 / dck		ICPMS204-B_091123A	66	R58375

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: 091120A-COND-PROBE

Run ID :Run Order: **COND_091120A: 1** SampType: **Laboratory Control Sample** Sample ID: **LCS1_091120A** Method: **A2510 B**

Analysis Date: **11/20/09 16:46** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1410	1.0	1412		100	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **COND_091120A: 2** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV1_091120A** Method: **A2510 B**

Analysis Date: **11/20/09 16:47** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	725	1.0	717.5		101	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **COND_091120A: 27** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV2_091120A** Method: **A2510 B**

Analysis Date: **11/20/09 17:28** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	728	1.0	718		101	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **COND_091120A: 37** SampType: **Sample Duplicate** Sample ID: **H09110290-005ADUP** Method: **A2510 B**

Analysis Date: **11/20/09 17:36** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	18.5	1.0						18.93	2.3	10	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: 091120A-PH-W

Run ID :Run Order: **PH2_091120A: 1** SampType: **Laboratory Control Sample** Sample ID: **LCS1_091120A** Method: **A4500-H B**

Analysis Date: **11/20/09 16:51** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.04	0.10	7		101	99	101				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **PH2_091120A: 13** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV1_091120A** Method: **A4500-H B**

Analysis Date: **11/20/09 17:15** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	10.1	0.10	10		101	99	101				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **PH2_091120A: 25** SampType: **Sample Duplicate** Sample ID: **H09110290-005ADUP** Method: **A4500-H B**

Analysis Date: **11/20/09 17:42** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.53	0.10						6.51	0.3	2	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: *10-Dec-09*

BatchID: 7456

Run ID :Run Order: **ACCU-124 (14410200)_091123B: 26** SampType: **Method Blank** Sample ID: **MB-7456** Method: **A2540 C**

Analysis Date: **11/23/09 14:19** Units: **mg/L** **Prep Info:** Prep Date: **11/23/2009** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	ND	1									

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ACCU-124 (14410200)_091123B: 27** SampType: **Laboratory Control Sample** Sample ID: **LCS-7456** Method: **A2540 C**

Analysis Date: **11/23/09 14:19** Units: **mg/L** **Prep Info:** Prep Date: **11/23/2009** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	979	10	1000		98	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ACCU-124 (14410200)_091123B: 31** SampType: **Sample Matrix Spike** Sample ID: **H09110290-003AMS** Method: **A2540 C**

Analysis Date: **11/23/09 14:22** Units: **mg/L** **Prep Info:** Prep Date: **11/23/2009** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2250	10	2000	312	97	80	120				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ACCU-124 (14410200)_091123B: 32** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110290-003AMSD** Method: **A2540 C**

Analysis Date: **11/23/09 14:22** Units: **mg/L** **Prep Info:** Prep Date: **11/23/2009** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2280	10	2000	312	98	80	120	2252	1.1	10	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: 7458

Run ID :Run Order: **ACCU-124 (14410200)_091123A: 25** SampType: **Method Blank** Sample ID: **MB-7458** Method: **A2540 D**

Analysis Date: **11/23/09 14:01** Units: **mg/L** **Prep Info:** Prep Date: **11/23/2009** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ACCU-124 (14410200)_091123A: 26** SampType: **Laboratory Control Sample** Sample ID: **LCS-7458** Method: **A2540 D**

Analysis Date: **11/23/09 14:01** Units: **mg/L** **Prep Info:** Prep Date: **11/23/2009** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1730	10	2000		87	70	130				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ACCU-124 (14410200)_091123A: 32** SampType: **Sample Duplicate** Sample ID: **H09110290-003ADUP** Method: **A2540 D**

Analysis Date: **11/23/09 14:04** Units: **mg/L** **Prep Info:** Prep Date: **11/23/2009** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	8.00	10						8		10	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: 7479

Run ID :Run Order: **ACCU-124 (14410200)_091125A: 1** SampType: **Method Blank** Sample ID: **MB-7479** Method: **A2540 C**
Analysis Date: **11/25/09 15:07** Units: **mg/L** **Prep Info:** Prep Date: **11/25/2009** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	4	1									

Associated samples: **H09110290-005**

Run ID :Run Order: **ACCU-124 (14410200)_091125A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-7479** Method: **A2540 C**
Analysis Date: **11/25/09 15:08** Units: **mg/L** **Prep Info:** Prep Date: **11/25/2009** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	986	10	1000	4	98	90	110				

Associated samples: **H09110290-005**

Run ID :Run Order: **ACCU-124 (14410200)_091125A: 4** SampType: **Sample Matrix Spike** Sample ID: **H09110290-005AMS** Method: **A2540 C**
Analysis Date: **11/25/09 15:09** Units: **mg/L** **Prep Info:** Prep Date: **11/25/2009** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2090	10	2000	109	99	80	120				

Associated samples: **H09110290-005**

Run ID :Run Order: **ACCU-124 (14410200)_091125A: 5** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110290-005AMSD** Method: **A2540 C**
Analysis Date: **11/25/09 15:09** Units: **mg/L** **Prep Info:** Prep Date: **11/25/2009** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2080	10	2000	109	98	80	120	2088	0.6	10	

Associated samples: **H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58375

Run ID :Run Order: **ICPMS204-B_091123A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS-090602A,090609B,090310A** Method: **E200.8**

Analysis Date: **11/23/09 10:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.254	0.10	0.25		102	90	110				
Antimony	0.0497	0.050	0.05		99	90	110				
Arsenic	0.0495	0.0050	0.05		99	90	110				
Barium	0.0505	0.10	0.05		101	90	110				
Beryllium	0.0255	0.0010	0.025		102	90	110				
Cadmium	0.0259	0.0010	0.025		104	90	110				
Chromium	0.0504	0.010	0.05		101	90	110				
Cobalt	0.0509	0.010	0.05		102	90	110				
Copper	0.0509	0.010	0.05		102	90	110				
Lead	0.0497	0.010	0.05		99	90	110				
Manganese	0.248	0.010	0.25		99	90	110				
Mercury	0.00198	0.0010	0.002		99	90	110				
Nickel	0.0502	0.010	0.05		100	90	110				
Selenium	0.0497	0.0050	0.05		99	90	110				
Silver	0.0250	0.0050	0.025		100	90	110				
Thallium	0.0503	0.10	0.05		101	90	110				
Vanadium	0.0490	0.10	0.05		98	90	110				
Zinc	0.0508	0.010	0.05		102	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA-090423A** Method: **E200.8**

Analysis Date: **11/23/09 11:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	46.5	0.10	40		116	70	130				
Antimony	0.00235	0.050									
Arsenic	0.000218	0.0050									
Barium	0.000844	0.10									
Beryllium	1.40E-05	0.0010									
Cadmium	0.000573	0.0010									
Chromium	0.00489	0.010									
Cobalt	0.000361	0.010									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58375

Run ID :Run Order: **ICPMS204-B_091123A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA-090423A** Method: **E200.8**

Analysis Date: **11/23/09 11:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.00144	0.010									
Lead	0.000618	0.010									
Manganese	0.00127	0.010									
Mercury	3.10E-05	0.0010									
Nickel	0.00162	0.010									
Selenium	0.000103	0.0050									
Silver	0.000114	0.0050									
Thallium	0.000131	0.10									
Vanadium	0.000249	0.10									
Zinc	0.00303	0.010									

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 12** SampType: **Interference Check Sample AB** Sample ID: **ICSAB-090423A,090108A** Method: **E200.8**

Analysis Date: **11/23/09 11:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.2	0.10	40		**98**	70	130				
Antimony	0.00183	0.050				0	0				
Arsenic	0.0103	0.0050	0.01		**103**	70	130				
Barium	2.00E-05	0.10				0	0				
Beryllium	5.00E-06	0.0010				0	0				
Cadmium	0.0101	0.0010	0.01		**101**	70	130				
Chromium	0.0242	0.010	0.02		**121**	70	130				
Cobalt	0.0204	0.010	0.02		**102**	70	130				
Copper	0.0208	0.010	0.02		**104**	70	130				
Lead	0.000505	0.010				0	0				
Manganese	0.0205	0.010	0.02		**103**	70	130				
Mercury	1.90E-05	0.0010				0	0				
Nickel	0.0212	0.010	0.02		**106**	70	130				
Selenium	0.0101	0.0050	0.01		**101**	70	130				
Silver	0.0187	0.0050	0.02		**94**	70	130				
Thallium	6.60E-05	0.10				0	0				
Vanadium	0.0204	0.10	0.02		**102**	70	130				
Zinc	0.0121	0.010	0.01		**121**	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58375

Run ID :Run Order: **ICPMS204-B_091123A: 12** SampType: **Interference Check Sample AB** Sample ID: **ICSAB-090423A,090108A** Method: **E200.8**

Analysis Date: **11/23/09 11:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 17** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS-090602A,090609B,090310A** Method: **E200.8**

Analysis Date: **11/23/09 11:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.250	0.10	0.25		100	90	110				
Antimony	0.0485	0.050	0.05		97	90	110				
Arsenic	0.0499	0.0050	0.05		100	90	110				
Barium	0.0499	0.10	0.05		100	90	110				
Beryllium	0.0247	0.0010	0.025		99	90	110				
Cadmium	0.0255	0.0010	0.025		102	90	110				
Chromium	0.0503	0.010	0.05		101	90	110				
Cobalt	0.0512	0.010	0.05		102	90	110				
Copper	0.0512	0.010	0.05		102	90	110				
Lead	0.0500	0.010	0.05		100	90	110				
Manganese	0.247	0.010	0.25		99	90	110				
Mercury	0.00194	0.0010	0.002		97	90	110				
Nickel	0.0511	0.010	0.05		102	90	110				
Selenium	0.0511	0.0050	0.05		102	90	110				
Silver	0.0251	0.0050	0.025		100	90	110				
Thallium	0.0504	0.10	0.05		101	90	110				
Vanadium	0.0493	0.10	0.05		99	90	110				
Zinc	0.0509	0.010	0.05		102	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 26** SampType: **Method Blank** Sample ID: **LRB** Method: **E200.8**

Analysis Date: **11/23/09 13:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	7E-05									
Antimony	ND	3E-05									

Qualifiers:
ND - Not Detected at the Reporting Limit
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N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: *10-Dec-09*

BatchID: R58375

Run ID :Run Order: **ICPMS204-B_091123A: 26** SampType: **Method Blank** Sample ID: **LRB** Method: **E200.8**

Analysis Date: **11/23/09 13:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	5E-05									
Barium	ND	3E-05									
Beryllium	ND	1E-05									
Cadmium	ND	1E-05									
Chromium	ND	0.0001									
Cobalt	ND	1E-05									
Copper	ND	7E-05									
Lead	ND	5E-06									
Manganese	ND	2E-05									
Mercury	ND	5E-06									
Nickel	ND	7E-05									
Selenium	ND	0.0002									
Silver	ND	2E-05									
Thallium	ND	1E-05									
Vanadium	ND	6E-05									
Zinc	0.001	9E-05									

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 27** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **11/23/09 13:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0511	0.10	0.05		**102**	85	115				
Antimony	0.0505	0.050	0.05		**101**	85	115				
Arsenic	0.0498	0.0050	0.05		**100**	85	115				
Barium	0.0512	0.10	0.05		**102**	85	115				
Beryllium	0.0489	0.0010	0.05		**98**	85	115				
Cadmium	0.0505	0.0010	0.05		**101**	85	115				
Chromium	0.0509	0.010	0.05		**102**	85	115				
Cobalt	0.0516	0.010	0.05		**103**	85	115				
Copper	0.0527	0.010	0.05		**105**	85	115				
Lead	0.0508	0.010	0.05		**102**	85	115				
Manganese	0.0494	0.010	0.05		**99**	85	115				
Mercury	0.000984	0.0010	0.001		**98**	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit
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A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58375

Run ID :Run Order: **ICPMS204-B_091123A: 27** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **11/23/09 13:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.0515	0.010	0.05		103	85	115				
Selenium	0.0507	0.0050	0.05		101	85	115				
Silver	0.0192	0.0050	0.02		96	85	115				
Thallium	0.0508	0.10	0.05		102	85	115				
Vanadium	0.0487	0.10	0.05		97	85	115				
Zinc	0.0525	0.010	0.05	0.001247	102	85	115				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 51** SampType: **Sample Matrix Spike** Sample ID: **H09110266-004BMS** Method: **E200.8**

Analysis Date: **11/23/09 15:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.07	0.10	1	0.04418	103	70	130				
Antimony	1.03	0.0050	1	0.00105	103	70	130				
Arsenic	82.0	0.0050	1	80.28		70	130				A
Barium	1.08	0.10	1	0.0291	105	70	130				
Beryllium	1.03	0.0010	1	0.000468	103	70	130				
Cadmium	1.02	0.0010	1	0.002816	101	70	130				
Chromium	0.988	0.010	1		99	70	130				
Cobalt	0.995	0.010	1	0.00359	99	70	130				
Copper	1.01	0.010	1	0.007674	101	70	130				
Lead	1.03	0.010	1	0.00368	102	70	130				
Manganese	6.67	0.010	1	5.996		70	130				A
Mercury	0.0218	0.0010	0.02	0.002684	96	70	130				
Nickel	0.995	0.010	1	0.007204	99	70	130				
Selenium	1.03	0.0050	1	0.03828	99	70	130				
Silver	0.389	0.0050	0.4		97	70	130				
Thallium	1.02	0.0050	1	0.000934	102	70	130				
Vanadium	0.953	0.10	1	0.004614	95	70	130				
Zinc	1.15	0.010	1	0.1482	100	70	130				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
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A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58375

Run ID :Run Order: **ICPMS204-B_091123A: 52** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110266-004BMSD** Method: **E200.8**

Analysis Date: **11/23/09 15:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.09	0.10	1	0.04418	104	70	130	1.075	1.3	20	
Antimony	1.04	0.0050	1	0.00105	104	70	130	1.03	1.3	20	
Arsenic	70.8	0.0050	1	80.28		70	130	81.96	15	20	A
Barium	1.07	0.10	1	0.0291	104	70	130	1.078	0.9	20	
Beryllium	1.03	0.0010	1	0.000468	103	70	130	1.026	0.5	20	
Cadmium	1.03	0.0010	1	0.002816	102	70	130	1.018	0.9	20	
Chromium	0.999	0.010	1		100	70	130	0.9882	1.1	20	
Cobalt	1.02	0.010	1	0.00359	102	70	130	0.9948	2.4	20	
Copper	1.04	0.010	1	0.007674	103	70	130	1.015	2	20	
Lead	1.03	0.010	1	0.00368	103	70	130	1.027	0.4	20	
Manganese	6.32	0.010	1	5.996		70	130	6.674	5.4	20	A
Mercury	0.0215	0.0010	0.02	0.002684	94	70	130	0.0218	1.2	20	
Nickel	1.02	0.010	1	0.007204	101	70	130	0.9946	2.6	20	
Selenium	1.05	0.0050	1	0.03828	101	70	130	1.031	1.9	20	
Silver	0.379	0.0050	0.4		95	70	130	0.389	2.6	20	
Thallium	1.04	0.0050	1	0.000934	104	70	130	1.016	2.1	20	
Vanadium	0.989	0.10	1	0.004614	98	70	130	0.9534	3.7	20	
Zinc	1.17	0.010	1	0.1482	102	70	130	1.148	1.8	20	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 76** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS-090602A,090609B,090310A** Method: **E200.8**

Analysis Date: **11/23/09 17:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.252	0.10	0.25		101	90	110				
Antimony	0.0495	0.050	0.05		99	90	110				
Arsenic	0.0493	0.0050	0.05		99	90	110				
Barium	0.0495	0.10	0.05		99	90	110				
Beryllium	0.0256	0.0010	0.025		103	90	110				
Cadmium	0.0256	0.0010	0.025		102	90	110				
Chromium	0.0506	0.010	0.05		101	90	110				
Cobalt	0.0505	0.010	0.05		101	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
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A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: *10-Dec-09*

BatchID: R58375

Run ID :Run Order: **ICPMS204-B_091123A: 76** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS-090602A,090609B,090310A** Method: **E200.8**

Analysis Date: **11/23/09 17:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0514	0.010	0.05		103	90	110				
Lead	0.0492	0.010	0.05		98	90	110				
Manganese	0.252	0.010	0.25		101	90	110				
Mercury	0.00186	0.0010	0.002		93	90	110				
Nickel	0.0506	0.010	0.05		101	90	110				
Selenium	0.0492	0.0050	0.05		98	90	110				
Silver	0.0249	0.0050	0.025		99	90	110				
Thallium	0.0497	0.10	0.05		99	90	110				
Vanadium	0.0491	0.10	0.05		98	90	110				
Zinc	0.0507	0.010	0.05		101	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 77** SampType: **Interference Check Sample A** Sample ID: **ICSA-090423A** Method: **E200.8**

Analysis Date: **11/23/09 17:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	45.2	0.10	40		113	70	130				
Antimony	0.00231	0.050									
Arsenic	0.000202	0.0050									
Barium	0.000834	0.10									
Beryllium	3.20E-05	0.0010									
Cadmium	0.000514	0.0010									
Chromium	0.00552	0.010									
Cobalt	0.000333	0.010									
Copper	0.00129	0.010									
Lead	0.000607	0.010									
Manganese	0.00129	0.010									
Mercury	2.90E-05	0.0010									
Nickel	0.00168	0.010									
Selenium	-0.000105	0.0050									
Silver	6.80E-05	0.0050									
Thallium	8.50E-05	0.10									

Qualifiers:
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A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@eneryglab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: *10-Dec-09*

BatchID: R58375

Run ID :Run Order: **ICPMS204-B_091123A: 77** SampType: **Interference Check Sample A** Sample ID: **ICSA-090423A** Method: **E200.8**

Analysis Date: **11/23/09 17:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vanadium	0.000218	0.10									
Zinc	0.00302	0.010									

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICPMS204-B_091123A: 78** SampType: **Interference Check Sample AB** Sample ID: **ICSAB-090423A,090108A** Method: **E200.8**

Analysis Date: **11/23/09 18:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 18	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	38.4	0.10	40		96	70	130				
Antimony	0.00187	0.050				0	0				
Arsenic	0.0104	0.0050	0.01		104	70	130				
Barium	3.00E-05	0.10				0	0				
Beryllium	1.10E-05	0.0010				0	0				
Cadmium	0.00994	0.0010	0.01		99	70	130				
Chromium	0.0252	0.010	0.02		126	70	130				
Cobalt	0.0201	0.010	0.02		101	70	130				
Copper	0.0207	0.010	0.02		104	70	130				
Lead	0.000493	0.010				0	0				
Manganese	0.0208	0.010	0.02		104	70	130				
Mercury	2.10E-05	0.0010				0	0				
Nickel	0.0215	0.010	0.02		107	70	130				
Selenium	0.00949	0.0050	0.01		95	70	130				
Silver	0.0169	0.0050	0.02		84	70	130				
Thallium	5.40E-05	0.10				0	0				
Vanadium	0.0203	0.10	0.02		102	70	130				
Zinc	0.0122	0.010	0.01		122	70	130				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
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Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58398

Run ID :Run Order: **MAN-TECH_091123A: 1** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**
Analysis Date: **11/23/09 13:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	0.9									

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **MAN-TECH_091123A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **A2320 B**
Analysis Date: **11/23/09 13:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	570	4.0	600		94	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **MAN-TECH_091123A: 66** SampType: **Sample Matrix Spike** Sample ID: **H09110290-002AMS** Method: **A2320 B**
Analysis Date: **11/23/09 20:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	690	4.0	600	75.83	103	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **MAN-TECH_091123A: 67** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110290-002AMSD** Method: **A2320 B**
Analysis Date: **11/23/09 20:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	690	4.0	600	75.83	102	90	110	692.4	0.3	20	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
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R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58411

Run ID :Run Order: **IC101-H_091120A: 12** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **E300.0**
Analysis Date: **11/20/09 18:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.5	1.0	2.5		101	90	110				
Sulfate	9.7	1.0	10		97	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **IC101-H_091120A: 13** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **E300.0**
Analysis Date: **11/20/09 18:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	87	1.0	87.47		99	90	110				
Sulfate	27	1.0	28.53		96	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **IC101-H_091120A: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E300.0**
Analysis Date: **11/20/09 18:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.7	1.0	5		94	90	110				
Sulfate	9.6	1.0	10		96	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **IC101-H_091120A: 15** SampType: **Method Blank** Sample ID: **MBLK** Method: **E300.0**
Analysis Date: **11/20/09 19:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.05									
Sulfate	ND	0.1									

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **IC101-H_091120A: 255** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E300.0**
Analysis Date: **11/23/09 12:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25		92	90	110				
Sulfate	49	1.0	50		98	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58411

Run ID :Run Order: **IC101-H_091120A: 255** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E300.0**

Analysis Date: **11/23/09 12:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **IC101-H_091120A: 262** SampType: **Sample Matrix Spike** Sample ID: **H09110290-002A MS** Method: **E300.0**

Analysis Date: **11/23/09 14:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	28	1.0	25	4.02	95	90	110				
Sulfate	100	1.0	50	51.58	102	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **IC101-H_091120A: 263** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110290-002A MSD** Method: **E300.0**

Analysis Date: **11/23/09 14:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	29	1.0	25	4.02	98	90	110	27.65	3.3	20	
Sulfate	100	1.0	50	51.58	106	90	110	102.8	1.6	20	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **IC101-H_091120A: 267** SampType: **Sample Duplicate** Sample ID: **H09110290-005A DUP** Method: **E300.0**

Analysis Date: **11/23/09 16:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.7	1.0						1.713	0.5	20	
Sulfate	0.38	1.0						0.36		20	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58415

Run ID :Run Order: **ICP1-HE_091123A: 23** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **E200.7**

Analysis Date: **11/23/09 10:46** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	40.0	1.0	40		100	95	105				
Gold	1.98	0.10	2		99	95	105				
Iron	4.21	0.030	4		105	95	105				
Magnesium	38.9	1.0	40		97	95	105				
Potassium	38.6	1.0	40		97	95	105				
Tellurium	2.05	0.10	2		103	95	105				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 25** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1** Method: **E200.7**

Analysis Date: **11/23/09 10:54** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.9	1.0	25		100	95	105				
Gold	2.57	0.10	2.5		103	95	105				
Iron	2.60	0.030	2.5		104	95	105				
Magnesium	24.8	1.0	25		99	95	105				
Potassium	24.3	1.0	25		97	95	105				
Tellurium	2.62	0.10	2.5		105	95	105				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 28** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**

Analysis Date: **11/23/09 11:03** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	522	1.0	500		104	80	120				
Gold	-0.0247	0.10				0	0				
Iron	192	0.030	200		96	80	120				
Magnesium	535	1.0	500		107	80	120				
Potassium	0.00410	1.0				0	0				
Tellurium	-0.0940	0.10				0	0				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58415

Run ID :Run Order: **ICP1-HE_091123A: 29** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**

Analysis Date: **11/23/09 11:06** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	520	1.0	500		104	80	120				
Gold	1.06	0.10	1		106	80	120				
Iron	204	0.030	200		102	80	120				
Magnesium	565	1.0	500		113	80	120				
Potassium	21.7	1.0	20		108	80	120				
Tellurium	0.980	0.10	1		98	80	120				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 32** SampType: **Method Blank** Sample ID: **MBLK** Method: **E200.7**

Analysis Date: **11/23/09 11:18** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	0.1	0.1									
Gold	ND	0.002									
Iron	0.01	0.002									
Magnesium	0.08	0.02									
Potassium	ND	0.04									
Tellurium	ND	0.01									

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 33** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **11/23/09 11:21** Units: **mg/L** Prep Info: Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.53	1.0	10	0.1168	94	85	115				
Gold	0.471	0.10	0.5		94	85	115				
Iron	0.974	0.030	1	0.0137	96	85	115				
Magnesium	9.30	1.0	10	0.0782	92	85	115				
Potassium	10.1	1.0	10		101	85	115				
Tellurium	0.450	0.10	0.5		90	85	115				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58415

Run ID :Run Order: **ICP1-HE_091123A: 34** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **E200.7**

Analysis Date: **11/23/09 11:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	20.0	1.0	20	0.1168	100	90	110				
Gold	0.988	0.010	1		99	90	110				
Iron	2.05	0.030	2	0.0137	102	90	110				
Magnesium	19.1	1.0	20	0.0782	95	90	110				
Potassium	20.0	1.0	20		100	90	110				
Tellurium	1.04	0.013	1		104	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 64** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **11/23/09 12:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.95	1.0	10		99	85	115				
Gold	0.503	0.10	0.5		101	85	115				
Iron	1.05	0.030	1	0.0019	105	85	115				
Magnesium	9.87	1.0	10	0.0289	98	85	115				
Potassium	10.4	1.4	10		104	85	115				
Tellurium	0.510	0.10	0.5	0.0264	97	85	115				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 97** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **11/23/09 14:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.34	1.0	10		93	85	115				
Gold	0.473	0.10	0.5		95	85	115				
Iron	0.985	0.030	1		99	85	115				
Magnesium	9.00	1.0	10	0.029	90	85	115				
Potassium	10.0	1.0	10		100	85	115				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58415

Run ID :Run Order: **ICP1-HE_091123A: 126** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**
Analysis Date: **11/23/09 16:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	23.9	1.0	25		96	90	110				
Gold	2.39	0.10	2.5		96	90	110				
Iron	2.56	0.030	2.5		102	90	110				
Magnesium	23.7	1.0	25		95	90	110				
Potassium	24.1	1.0	25		96	90	110				
Tellurium	2.51	0.10	2.5		100	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091123A: 130** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**
Analysis Date: **11/23/09 16:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.60	1.0	10		96	85	115				
Gold	0.481	0.10	0.5		96	85	115				
Iron	1.03	0.030	1		103	85	115				
Magnesium	9.65	1.0	10	0.0344	96	85	115				
Potassium	9.68	1.0	10		97	85	115				
Tellurium	0.489	0.10	0.5	0.0237	93	85	115				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 137** SampType: **Sample Matrix Spike** Sample ID: **H09110290-003BMS2** Method: **E200.7**
Analysis Date: **11/23/09 16:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	71.0	1.0	20	56.1	75	70	130				
Gold	0.917	0.010	1		92	70	130				
Iron	1.91	0.030	2	0.0051	95	70	130				
Magnesium	29.3	1.0	20	11.72	88	70	130				
Potassium	23.8	1.0	20	4.825	95	70	130				
Tellurium	0.858	0.025	1		86	70	130				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58415

Run ID :Run Order: **ICP1-HE_091123A: 138** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**

Analysis Date: **11/23/09 16:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.8	1.0	25		103	90	110				
Gold	2.54	0.10	2.5		102	90	110				
Iron	2.62	0.030	2.5		105	90	110				
Magnesium	25.3	1.0	25		101	90	110				
Potassium	24.4	1.0	25		98	90	110				
Tellurium	2.70	0.10	2.5		108	90	110				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 140** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110290-003BMSD2** Method: **E200.7**

Analysis Date: **11/23/09 16:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	69.4	1.0	20	56.1	67	70	130	71.02	2.3	20	S
Gold	0.902	0.010	1		90	70	130	0.9166	1.6	20	
Iron	1.91	0.030	2	0.0051	95	70	130	1.906	0.4	20	
Magnesium	28.4	1.0	20	11.72	84	70	130	29.28	3	20	
Potassium	23.7	1.0	20	4.825	94	70	130	23.78	0.4	20	
Tellurium	0.904	0.025	1		90	70	130	0.8584	5.2	20	

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091123A: 146** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**

Analysis Date: **11/23/09 17:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	502	1.0	500		100	80	120				
Gold	-0.0251	0.10				0	0				
Iron	190	0.030	200		95	80	120				
Magnesium	519	1.0	500		104	80	120				
Potassium	-0.000300	1.0				0	0				
Tellurium	-0.0209	0.10				0	0				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: *10-Dec-09*

BatchID: R58415

Run ID :Run Order: **ICP1-HE_091123A: 147** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**

Analysis Date: **11/23/09 17:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 6	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	497	1.0	500		99	80	120				
Gold	0.995	0.10	1		100	80	120				
Iron	194	0.030	200		97	80	120				
Magnesium	525	1.0	500		105	80	120				
Potassium	21.4	1.0	20		107	80	120				
Tellurium	0.907	0.10	1		91	80	120				

Associated samples: **H09110290-001; H09110290-002; H09110290-003; H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

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ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58468

Run ID :Run Order: **ICP1-HE_091124B: 23** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **E200.7**
Analysis Date: **11/24/09 14:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	41.2	1.0	40		103	95	105				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 25** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1** Method: **E200.7**
Analysis Date: **11/24/09 14:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	25.8	1.0	25		103	95	105				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 28** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**
Analysis Date: **11/24/09 15:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.0685	1.0				0	0				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 29** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**
Analysis Date: **11/24/09 15:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	22.4	1.0	20		112	80	120				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 32** SampType: **Method Blank** Sample ID: **MBLK** Method: **E200.7**
Analysis Date: **11/24/09 15:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	0.1									

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58468

Run ID :Run Order: **ICP1-HE_091124B: 33** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**
Analysis Date: **11/24/09 15:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9.33	1.0	10		93	85	115				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 34** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **E200.7**
Analysis Date: **11/24/09 15:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20.0	1.0	20		100	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 42** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**
Analysis Date: **11/24/09 15:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	24.7	1.0	25		99	90	110				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 54** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**
Analysis Date: **11/24/09 16:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	23.6	1.0	25		94	90	110				

Associated samples:

Run ID :Run Order: **ICP1-HE_091124B: 57** SampType: **Sample Matrix Spike** Sample ID: **H09110290-004BMS2** Method: **E200.7**
Analysis Date: **11/24/09 16:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	40.4	1.0	20	22.48	90	70	130				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

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Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58468

Run ID :Run Order: **ICP1-HE_091124B: 58** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110290-004BMSD2** Method: **E200.7**
Analysis Date: **11/24/09 16:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	41.8	1.0	20	22.48	97	70	130	40.4	3.4	20	

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 61** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**
Analysis Date: **11/24/09 16:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.508	1.0				0	0				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Run ID :Run Order: **ICP1-HE_091124B: 62** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**
Analysis Date: **11/24/09 16:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	17.6	1.0	20		88	80	120				

Associated samples: **H09110290-001; H09110290-002; H09110290-003**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

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Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58469

Run ID :Run Order: **ICP1-HE_091125A: 10** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **E200.7**
Analysis Date: **11/25/09 09:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	41.9	1.0	40		105	95	115				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 11** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1** Method: **E200.7**
Analysis Date: **11/25/09 09:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	25.6	1.0	25		102	95	115				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 14** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**
Analysis Date: **11/25/09 09:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.0623	1.0				0	0				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 15** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**
Analysis Date: **11/25/09 09:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	22.3	1.0	20		112	80	120				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 17** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**
Analysis Date: **11/25/09 09:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	25.9	1.0	25		104	90	110				

Associated samples: **H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

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Work Order: H09110290
Project: Residential Wells-Long Term RI/RS-Novem

ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58469

Run ID :Run Order: **ICP1-HE_091125A: 19** SampType: **Method Blank** Sample ID: **MBLK** Method: **E200.7**
Analysis Date: **11/25/09 10:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	0.1									

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 20** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**
Analysis Date: **11/25/09 10:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9.84	1.0	10		98	85	115				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 21** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **E200.7**
Analysis Date: **11/25/09 10:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20.7	1.0	20		104	90	110				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 23** SampType: **Sample Matrix Spike** Sample ID: **H09110290-004BMS2** Method: **E200.7**
Analysis Date: **11/25/09 10:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	46.4	1.0	20	24.72	109	70	130				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 24** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110290-004BMSD2** Method: **E200.7**
Analysis Date: **11/25/09 10:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	44.8	1.0	20	24.72	100	70	130	46.42	3.6	20	

Associated samples: **H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
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N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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ANALYTICAL QC SUMMARY REPORT

Date: *10-Dec-09*

BatchID: R58469

Run ID :Run Order: **ICP1-HE_091125A: 28** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**

Analysis Date: **11/25/09 10:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	0.0637	1.0				0	0				

Associated samples: **H09110290-004; H09110290-005**

Run ID :Run Order: **ICP1-HE_091125A: 29** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**

Analysis Date: **11/25/09 10:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	22.0	1.0	20		110	80	120				

Associated samples: **H09110290-004; H09110290-005**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

Client: Asarco LLC
Work Order: H09110290
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ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58505

Run ID :Run Order: **ICPMS204-B_091124A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS-090602A,090609B,090310A** Method: **E200.8**

Analysis Date: **11/24/09 11:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0499	0.0050	0.05		100	90	110				
Copper	0.0511	0.010	0.05		102	90	110				
Selenium	0.0498	0.0050	0.05		100	90	110				

Associated samples: **H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ICPMS204-B_091124A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA-090423A** Method: **E200.8**

Analysis Date: **11/24/09 11:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.000140	0.0050									
Copper	0.00143	0.010									
Selenium	0.000112	0.0050									

Associated samples: **H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ICPMS204-B_091124A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB-090423A,090108A** Method: **E200.8**

Analysis Date: **11/24/09 11:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0103	0.0050	0.01		103	70	130				
Copper	0.0207	0.010	0.02		104	70	130				
Selenium	0.00994	0.0050	0.01		99	70	130				

Associated samples: **H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ICPMS204-B_091124A: 14** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS-090602A,090609B,090310A** Method: **E200.8**

Analysis Date: **11/24/09 12:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0507	0.0050	0.05		101	90	110				
Copper	0.0523	0.010	0.05		105	90	110				
Selenium	0.0519	0.0050	0.05		104	90	110				

Qualifiers:
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N - Analyte concentration was not sufficiently high to calculate RPD
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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@energylab.com *

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ANALYTICAL QC SUMMARY REPORT

Date: 10-Dec-09

BatchID: R58505

Run ID :Run Order: **ICPMS204-B_091124A: 26** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H09110290-002BMSD** Method: **E200.8**

Analysis Date: **11/24/09 13:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0501	0.0050	0.05	0.0004801	99	70	130	0.04979	0.6	20	
Copper	0.0673	0.010	0.05	0.01626	102	70	130	0.06678	0.7	20	
Selenium	0.0514	0.0050	0.05	0.0006436	101	70	130	0.05109	0.6	20	

Associated samples: **H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ICPMS204-B_091124A: 51** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS-090602A,090609B,090310A** Method: **E200.8**

Analysis Date: **11/24/09 15:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0496	0.0050	0.05		99	90	110				
Copper	0.0507	0.010	0.05		101	90	110				
Selenium	0.0507	0.0050	0.05		101	90	110				

Associated samples: **H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ICPMS204-B_091124A: 52** SampType: **Interference Check Sample A** Sample ID: **ICSA-090423A** Method: **E200.8**

Analysis Date: **11/24/09 15:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.000106	0.0050									
Copper	0.00127	0.010									
Selenium	1.60E-05	0.0050									

Associated samples: **H09110290-002; H09110290-003; H09110290-004**

Run ID :Run Order: **ICPMS204-B_091124A: 53** SampType: **Interference Check Sample AB** Sample ID: **ICSAB-090423A,090108A** Method: **E200.8**

Analysis Date: **11/24/09 15:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0107	0.0050	0.01		107	70	130				
Copper	0.0215	0.010	0.02		108	70	130				
Selenium	0.00984	0.0050	0.01		98	70	130				

Associated samples: **H09110290-002; H09110290-003; H09110290-004**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount